Issue 98
PS
1961 Series
THE PREVENTIVE MAINTENANCE MONTHLY
OH YEAH?! WELL, TAKE A GOOD LOOK AT THE @★#!! CONDITION OF HIS RIFLE!
IMPIRE
ENEMY
TEAM A
POWs WILL REPORT TO C.P. IMMEDIATELY UPON CAPTURE
OPERATION "FROGHOP"
WILL EISNER

CAN YOU— SHOOT...?, SCOOT...?

If you and your unit are 100-per in those three departments, then you're earning what you get in the payline every month. And your Uncle Sam is real proud of you.

If not, something's wrong, and too often it can be pinned on one thing: Maintenance . . . or—most likely—no maintenance, or the wrong kind of maintenance. And that makes your Uncle real unhappy.

You see, Shoot, Scoot and Communicate are what you're in the Army to do.

Shoot—delivering firepower on the enemy is the purpose of every man in the Army, no matter whether you're a rifleman or if you're punching a typewriter at some remote post Stateside. You do your part to get that firepower delivered.

Scoot—in modern warfare, being able to move is more important than it ever has been. To win on a nuclear battlefield, you and your unit have got to move miles in minutes . . . not in hours or days as has been the speed of wars in history.

And Communicate—the word must be passed up and down the line so everybody will know what to do and what's going on . . . with no time lost.

To do all this on the battlefield of the present and future you and your unit have scads of complicated equipment . . . some that's been with us a long time . . . others as new as the blonde you saw in town last Saturday.

Like her, they take plenty of that good, old-fashioned Preventive Maintenance . . . with a modern touch.

You and your buddies have to learn the right kind of operation, care, checks and smooth and careful handling to keep 'em purring. That way they'll put out when the right time comes. And that'll make all your efforts worthwhile.

PM pays off. Try it.

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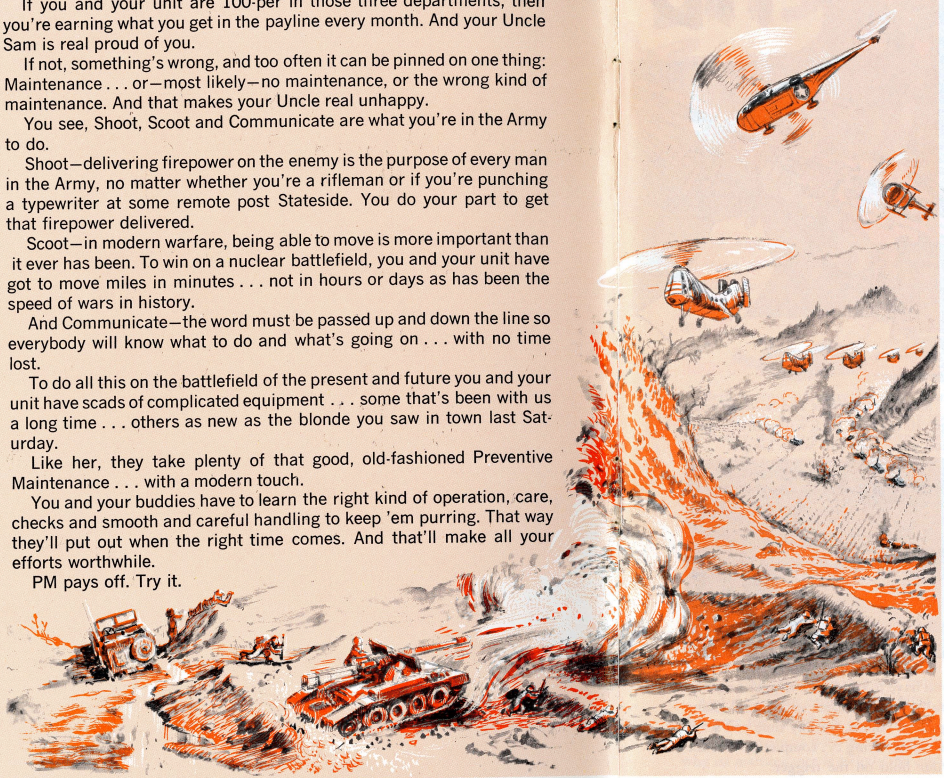

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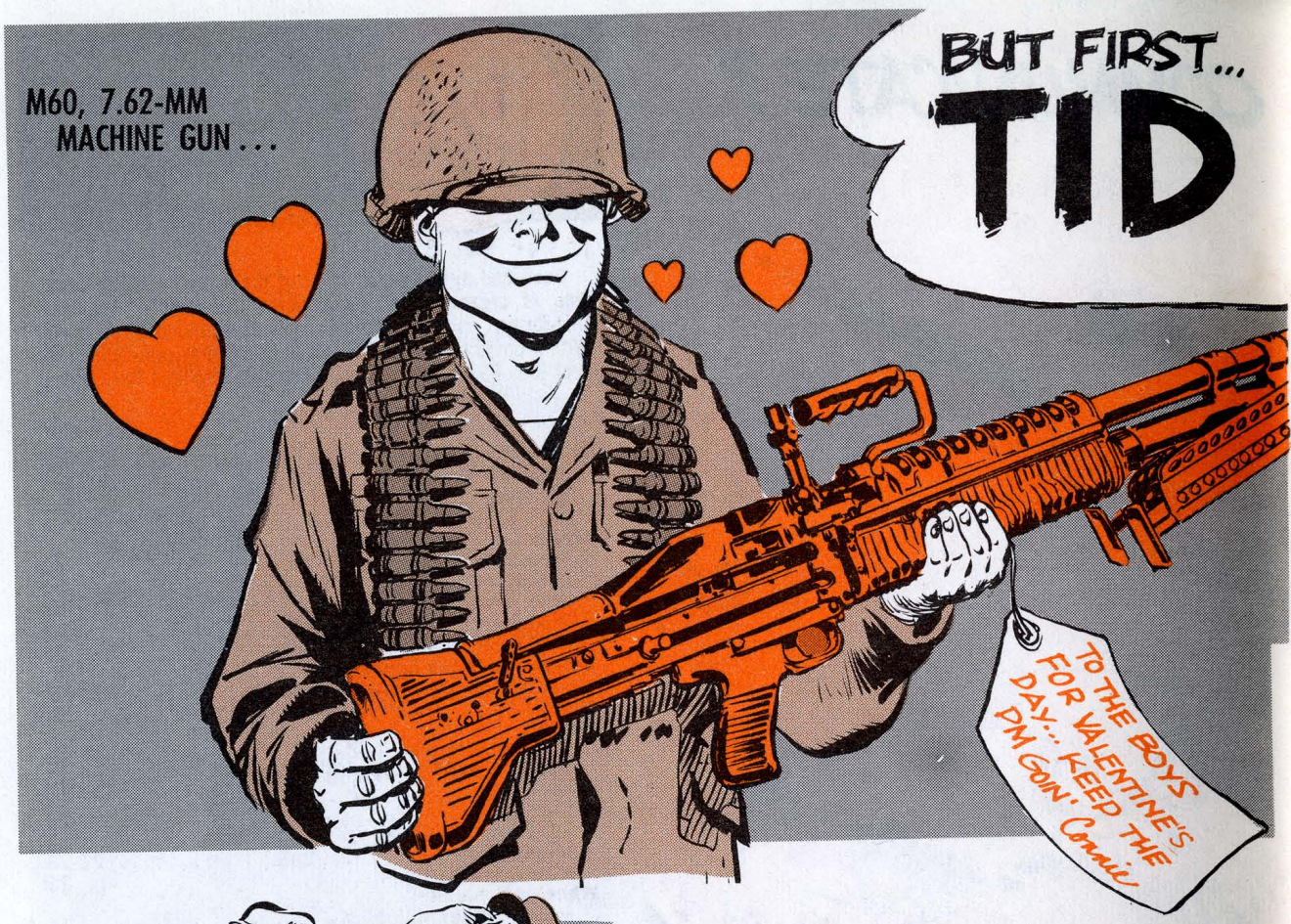


GRIP POINTS

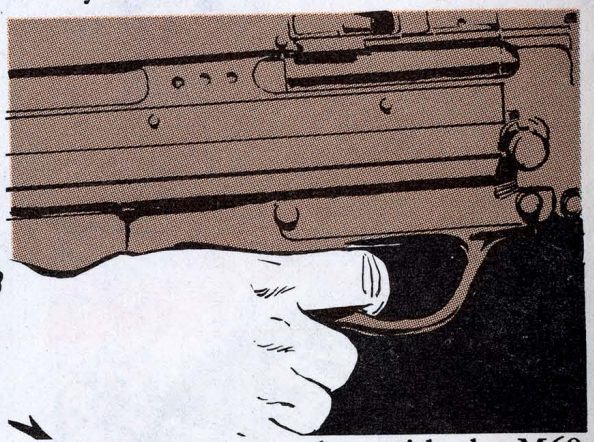
The grip points on the M60, 7.62-mm machine gun are covered with rugged stuff which can take heat or cold, and it is also immune to oils, acids and alkalies. For cleaning these areas all you do is wipe 'em clean and dry.

TRIGGER SQUEEZE

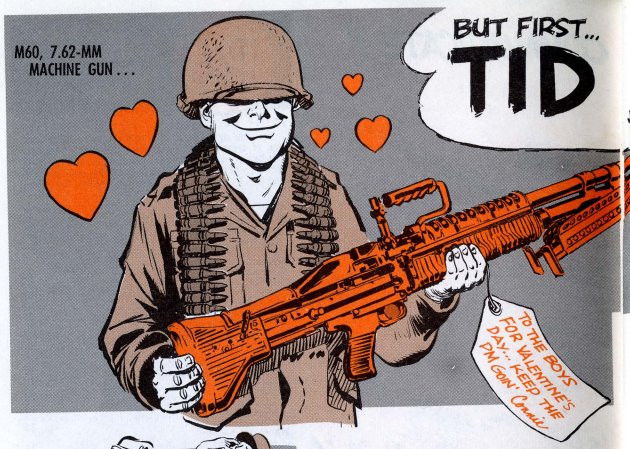
On the M60 whether you're firing a short burst or firing steady you must always squeeze the trigger all the way back as far as it'll go, and hold it there.

If you hold the trigger only part way back you cause unfair wear on the sear . . . you'll not be tripping it clear out of the way, and it'll take a beating on the nose from the operating rod.

So always squeeze and hold the trigger all the way, back with a firm finger, and your sear will wear longer.



To fire a single shot with the M60 you have to train your trigger-finger to pull away fast after each round. Same goes, of course, for any time you want to stop firing . . . completely release your hold on the trigger.



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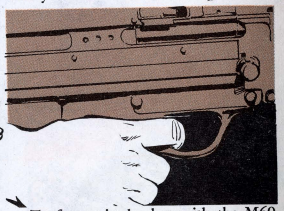

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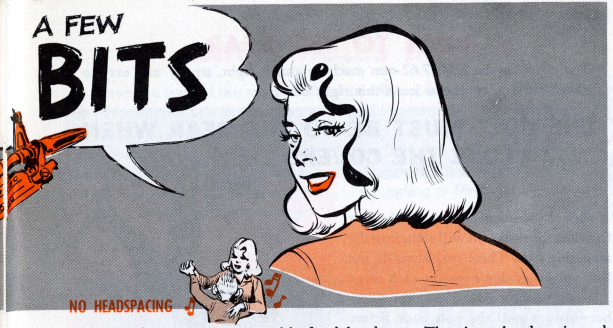


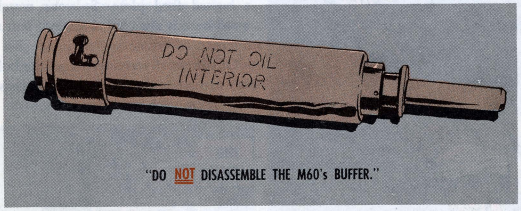
NO HEADSPACING

The M60 comes to you with fixed headspace. There's no headspacing adjustment to worry about even when you swap barrels.

And, furthermore, the M60 quick-change barrels are completely interchangeable. That is, any good M60 barrel will work OK on any M60 machine gun.

HANDS OFF THE BUFFER

Neither you nor anyone real near is authorized to disassemble the M60's buffer group. About the only worry you (and the company armorer) have with the buffer is wiping it clean, inspecting it and replacing it if it's worn.



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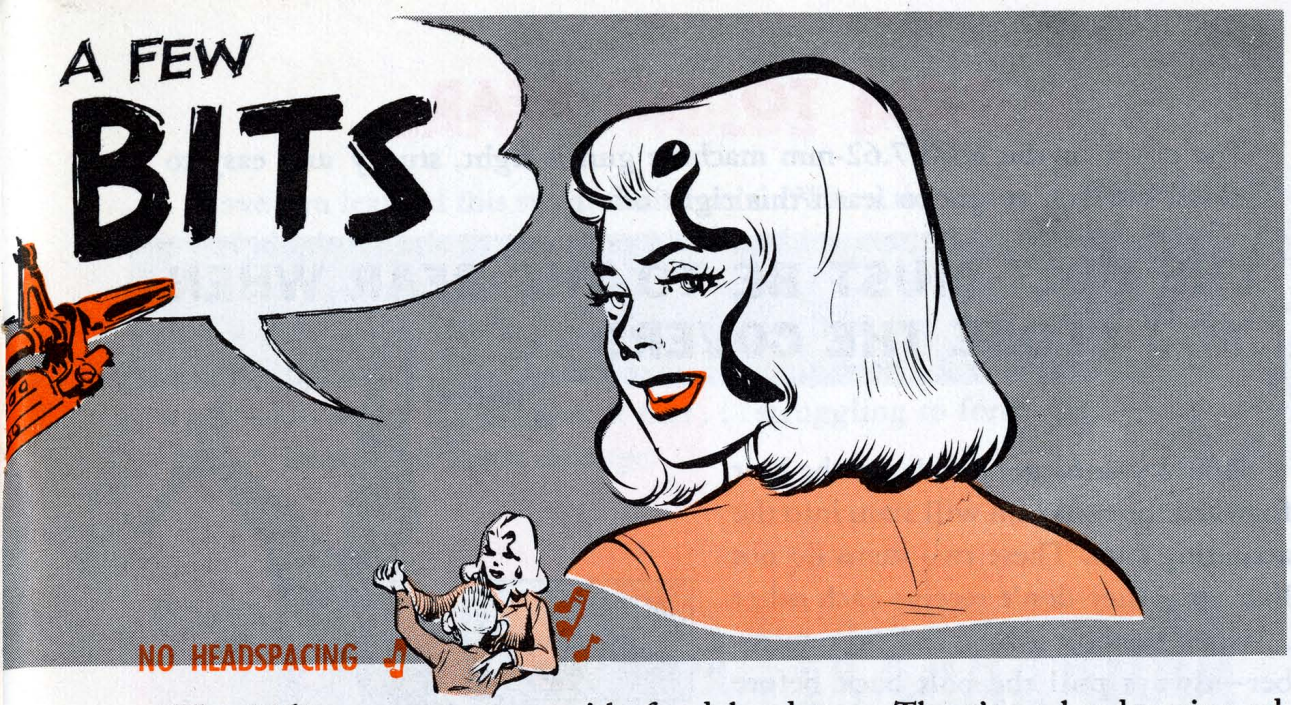
Even your weapon's support outfit keeps its hands off the buffer's innards.

And the big fat caution "DO NOT OIL INTERIOR" stamped on the buffer also goes for everybody in the field.

Messing around with the buffer can seriously hurt the weapon's firing, that's why its maintenance is strictly the job of Ordnance people.



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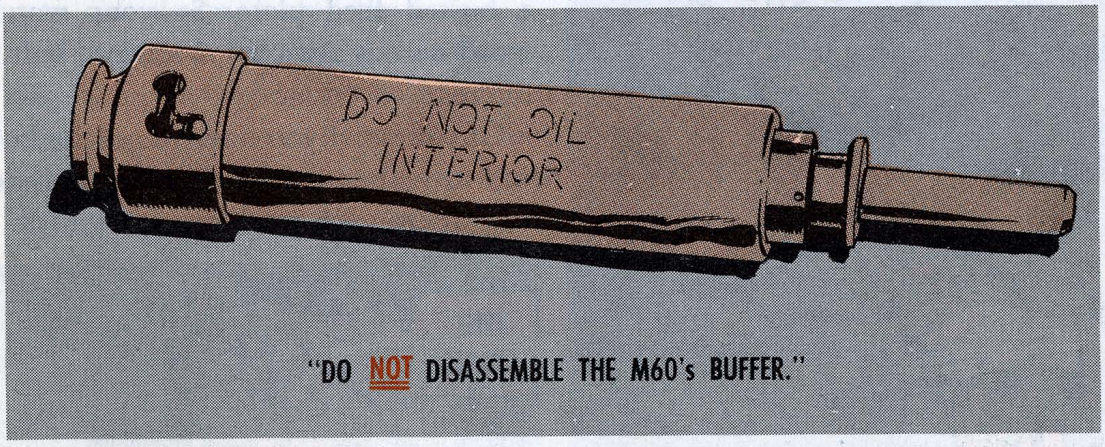

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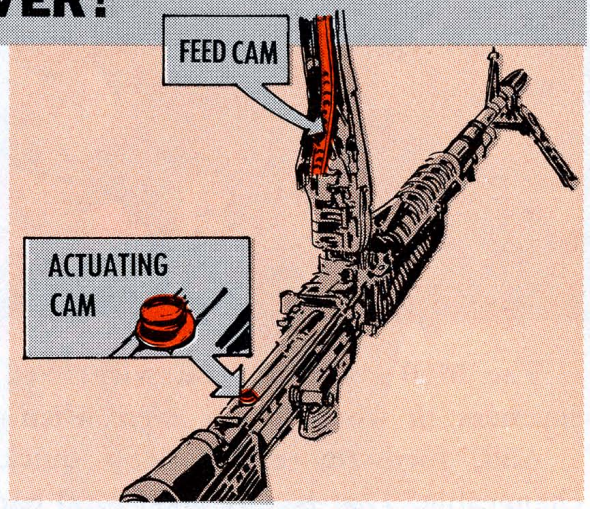
BOLT TO THE REAR

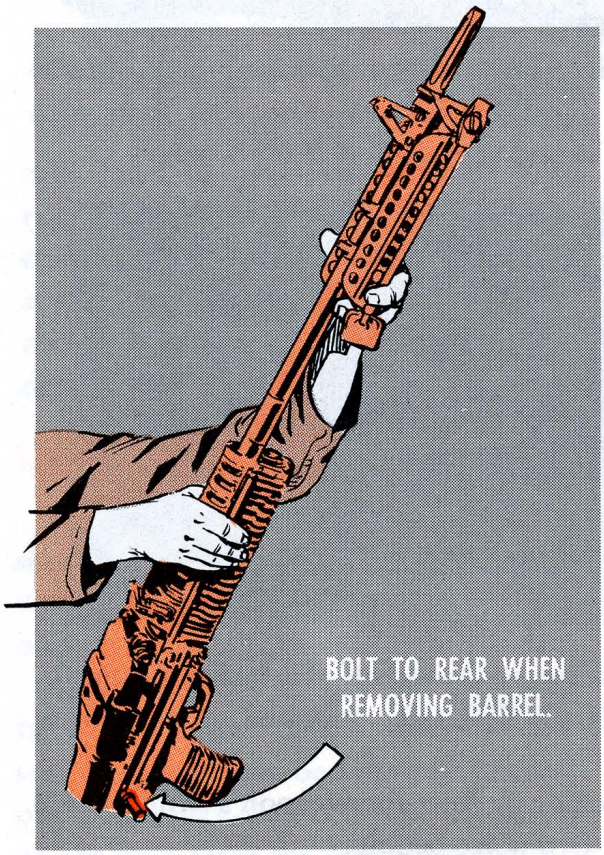
The cover on the M60 7.62-mm machine gun is light, sturdy and easy to close, but you've got to learn this right off:

THE BOLT MUST BE TO THE REAR WHEN YOU CLOSE THE COVER!

Should you forget and leave the bolt forward the feed cam will slam into the actuating cam. These two items do not line up... they don't receive each other ... when the bolt is forward. So remember—always pull the bolt back before closing the cover.

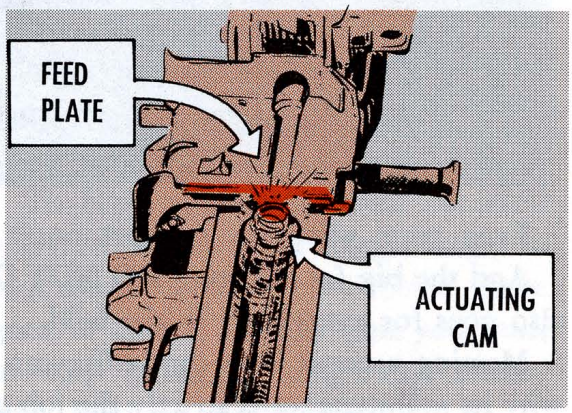


ANOTHER M60 OPERATION WHICH CALLS FOR LOCKING THE BOLT TO THE REAR IS ANY TIME YOU TAKE THE BARREL OFF.

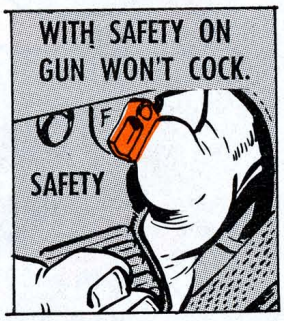


If you allow the bolt to go forward —when the barrel's out—the actuating cam will ram the feed plate. The crash can put your M60 out of business with a busted feed plate. So your watchword here is always . . . always, bolt to the rear.

Of course, if you have to get the bolt forward when the barrel's out just ease it up there with your hand.



SAFETY HOLDS DOUBLE

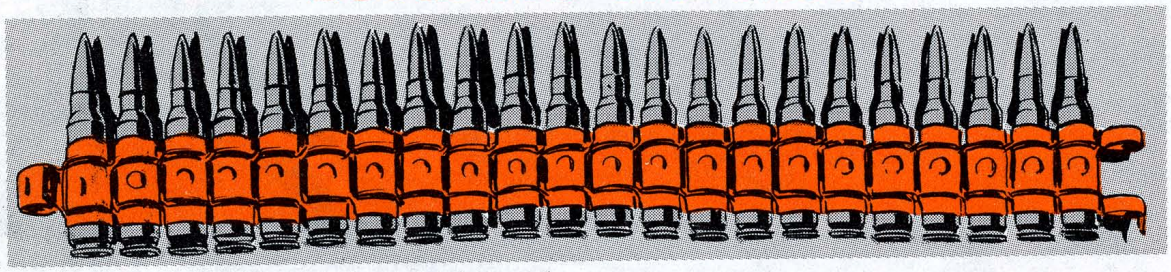


Have you learned this sweat savin' point: When the safety is ON, don't wrestle to cock your M60 machine gun.

Before you start yanking 'er back, thinking she's jammed, take a peek at the safety . . . more'n likely it'll be on.

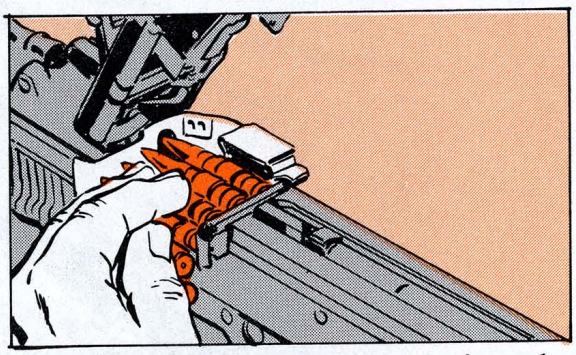
With the safety ON the weapon not only won't fire, it won't cock either . . . so check it first . . . struggling to force the bolt back could cause damage.

LOADING THE M60



Have you taken a close look at the ammo belt links for the M60, 7.62-mm machine gun? They're a mite different from the old .30 cal belt links. The new links have an open side and a closed side . . . and here lies your loading cue. The ammo belt must be fed with the link's open side down, facing the bolt.

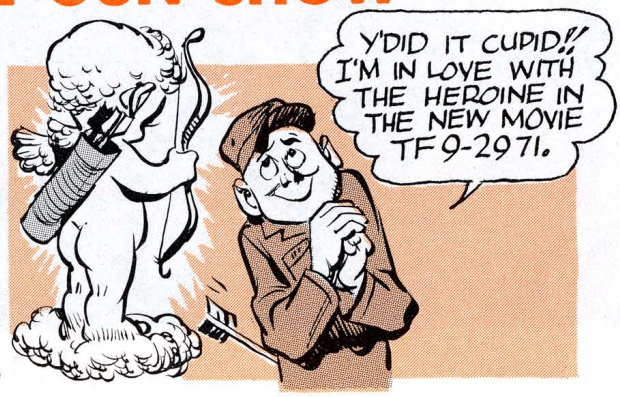
If the belt is fed with the link's open side facing up the ammo will feed, but when the bolt comes forward the bolt lug hits the link and the ammo won't chamber.



So please take care . . . placing the links the wrong way will very easily give you a jammed-ammo problem, plus a damaged weapon.

M60 MACHINE GUN SHOW

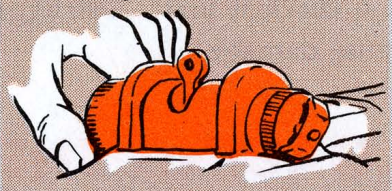
Want to see what the M60, 7.62-mm machine gun can do? Ask your training section to check with the post Signal Corps training film office for TF 9-2971, "Operation and Cycle of Function." The training film on the new gun's just been released.



BE YOUR OWN INSPECTOR TO . . .

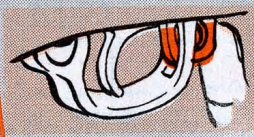
BE SURE OF YOUR M1 RIFLE

REAR SIGHT—aperature not blackened, adjustments worn or not operating smoothly.



BOLT—cracks, burrs, rust, broken firing pin.

RIFLE ACCESSORIES—not stored right in butt stock (see p 374 of FM 23-5).



SAFETY—not operating.

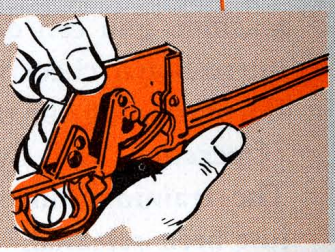
BUTT PLATE—loose, screws missing.

SWIVELS—loose in stock.

TRIGGER GUARD—fits too tight or won't close at all (let your Ordnance support know. It's supposed to come to rest approx. 30° from locked position without forcing).

SLING—frayed, broken webbing, buckles weak, faulty.

TRIGGER HOUSING—burrs, rust, bent.



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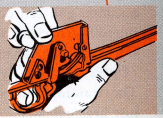


CLIP LATCH—binding, spring weak or broken.

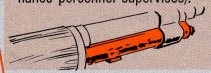
FINISH ON METAL PARTS—shines, rust, shows signs that abrasives were used.

FRONT SIGHT—dents, burrs, loose, deformed, blade not blackened.

BORE—pits, rust, bulges, rings, erosion.

MUZZLE—dents, burrs, patch stuck inside (if you can't get it out with cleaning rod, it's a job for the armorer).

GAS CYLINDER—dents, burrs, lock screw head has dirt or carbon on it (make sure you check this after you've used a grenade launcher—NCO or Ordnance personnel supervises).



FOLLOWER ROD—pinched or worn fork, loose rivets.

OPERATING ROD—rounded, chipped or cracked piston, bent or damaged and restricted movement.

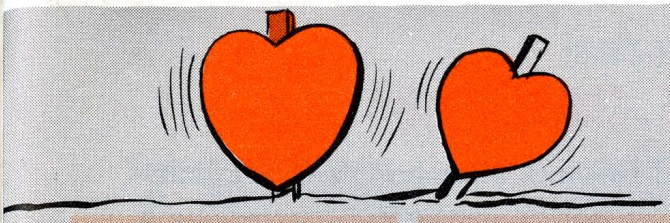
OPERATING ROD SPRING—broken, bent, rusted.

STOCKS AND HANDGUARDS—signs of unauthorized sanding (fuzzy surfaces), cracked, split, scarred, screws loose or slots damaged.

CHAMBER—rust, dirt in shoulder (clean like FM23-5 para 32b. [2] says).

CLEANING ROD (M10)—assembled wrong or incompletely.

Buffer missing.



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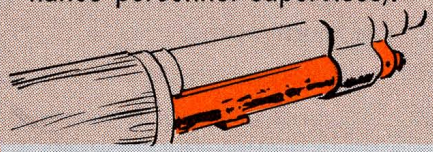

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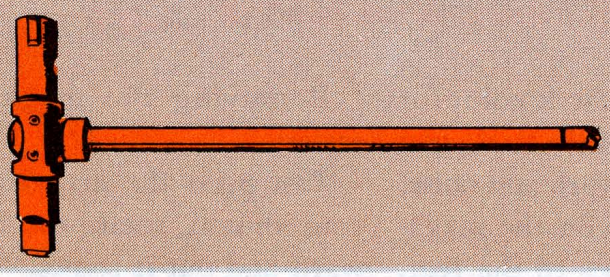
CLEANING ROD (M10)—assembled wrong or incompletely.

Buffer missing.



WHERE'S THE "A"...?

When your M14, 7.62-mm rifle is rigged for both semi-automatic and automatic fire you can instantly select the rate of fire by giving the selector lug a quick turn.

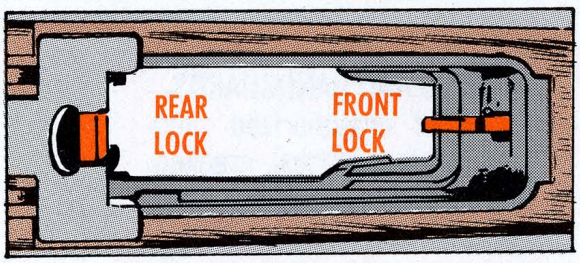
When the **A** marked on the selector lug faces you your rifle is set for automatic fire. When the **A** is turned away from you (to the muzzle end) your firing selector is set for semi-automatic fire.

To select your rate of fire at night (or any other time you can't see the **A**): If the selector lug is down your M14's on semi-automatic fire. If the lug's sticking up you're ready for full automatic fire.

SWING IT BACK, AND CLICK IT...

LOCK RIGHT

There's a front and a rear lock holding the magazine in your M14, 7.62-mm rifle. The magazine can be locked in place instantly, and once fastened right it's in to stay . . . you can't pull it out or shake it loose accidentally.



To lock it right, simply—

1. Hold the magazine with its bottom-end angled slightly forward, and push its top front-end into the magazine-well. The magazine'll quickly latch on to the operating-rod spring-guide.
2. Now push the magazine up and back firmly. It'll pivot into place smoothly and you'll hear a solid click as the rear magazine latch grabs hold.

If you should need a check point for inserting the magazine in the dark, you can do away with guesswork and noise, by feeling for the latch on the magazine . . . you know it goes to the rear.

Removing the magazine is even easier:

Just press the magazine catch with your thumb, rotate the magazine forward and out it comes.

HERE'S HOW TO CHECK:

YOUR SET NO. 1 SUPPLEMENTAL

You've got no trouble in checking out your Tool Kit, Automotive Maintenance, Organizational: (2d echelon), Set No. 1, Supplemental (FSN 5180-754-0653) if you use this as a guide.

Remember though, difference in manufacturer sometimes makes a difference in the shape of the tool. So before you turn your tool in just because it doesn't look like the one shown here, take another look at the FSN.

ADAPTER, CONNECTOR: ceramic dielectric, stght shape, four contacts, two mating ends, $1\frac{25}{64}$ in lg, $1\frac{7}{16}$ in w, $\frac{27}{32}$ in h, non-locking type.

FSN 5935-204-8391 **ENG**

ADAPTER, CONNECTOR: ru dielectric, Y-shaped, three mating ends, ten contacts, two male, rd outlet ends, two female fl parallel, ac/dc, 250 v, 30 amp.

FSN 5935-642-2441 **ENG**

ADAPTER SET, ENGINE ELECTRICAL TEST: 24 v sealed elec systems, five adapters in mtl box.

FSN 4910-348-7600 **ORD**

ADAPTER ASSY: regulator harness, w/battery terminals 1 and 2

FSN 4910-092-9025

ADAPTER ASSY: generator test, generator to regulator harness, w/armature & field terminals 1 and 2.

FSN 4910-092-9026

ADAPTER: ignition unit (coil and distributor).

FSN 4910-356-7508

ADAPTER: SPARK PLUG, w/through cond ignition cable.

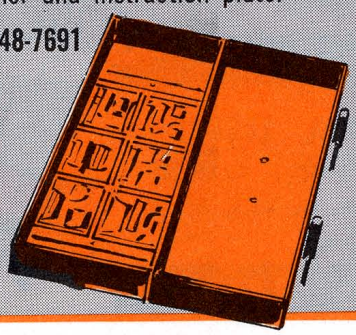
FSN 4910-356-7504

ADAPTER: pri ckt (distributor), w/spg loaded through cond plunger, and male thd connection.

FSN 4910-356-7492

BOX, adpt: set, S, w/piano hinged cover, snap fastener and instruction plate.

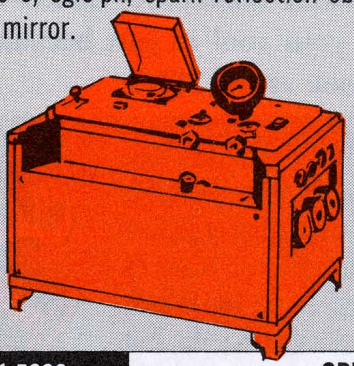
FSN 4910-348-7691



CABLE ASSEMBLY, POWER, ELECTRICAL: two cond, 16 AWG, stranded, 25 ft 4 in lg overall incl terminations (Cable Electric Products Inc, no. 5RP-25, or equal).

FSN 6150-033-6332 ENG

CLEANER AND TESTER, SPARK PLUG: bench mtd, spark plug sizes 10mm, 14mm, 18mm, 7/8 in, 120 to 150 psi air pressure reqd, hose connection thd type, 1/4 in nom size, tester var pressure type, operating power requirements, ac, 110 v, 60 c, sgle-ph, spark reflection observed in stl mirror.

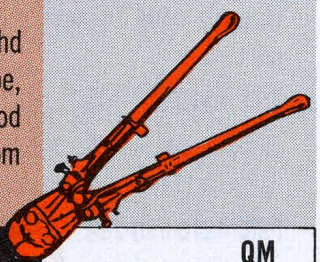


FSN 4910-261-5868 ORD

CUP, PAINT, SPRAY GUN: 1 qt cap, clamp type, w/cover attachment, al. 2 ea.

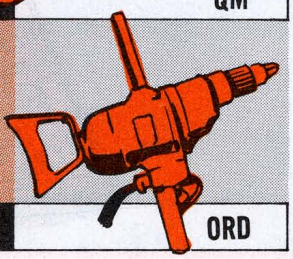
FSN 4940-190-5164 ORD

CUTTER, BOLT: rigid hd type, clipper cut type, 1/4 in dia mild stl rod cutting cap, 14 in nom lg overall.



FSN 5110-596-9154 QM

DRILL, ELECTRIC, PORTABLE: 1/2 in nom size, hv-duty, ac/dc, 115 v.



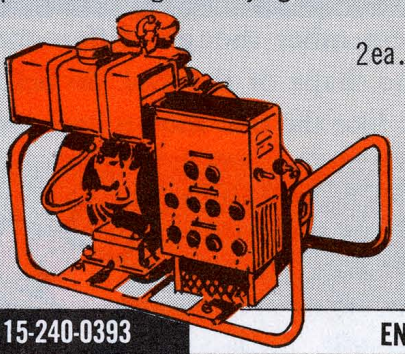
FSN 5130-293-1849 ORD

GAGE, TENSION: contact points & brushes, calibrated 0 to 80 in one oz grad, coil spg type, w/push rod & hood in mtl case.

FSN 5210-449-3750 ORD

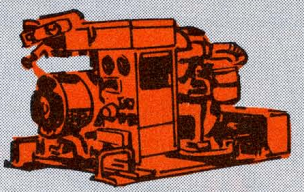
GENERATOR SET, GASOLINE ENGINE: 2 kw, 12 v, self-excited, air cooled, btry cranked, manually cranked by rope, 12 v cranking voltage, skid mtd, open, 32 in lg, 24 in w, 30 in h, w/radio interference suppression, winterized, w/complement listing in carrying case.

2 ea.



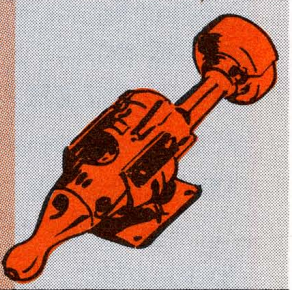
FSN 6115-240-0393 ENG

GENERATOR SET, GASOLINE ENGINE: ac, 60 c, 1.5 kw rating, 120 v line to line, sgle-ph, 1.0 pf, separately excited, exciter incl, air cooled, manually cranked by rope, skid mtd, 30 in lg, 19 in w, 26 in h, w/radio interference suppression, winterized.



FSN 6115-245-2522 ENG

GRINDER, ELECTRIC, PORTABLE: 6 in dia x 1 in thk wheel cap, 5/8 in dia spdl, ac/dc, 115 v, shielded to prevent radio interference, w/bench stand.

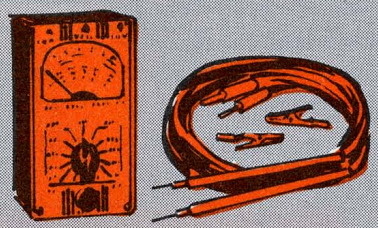


FSN 5130-293-2488 ORD

LIGHT, IGNITION TIMING: three-lead type, 3 v to 4½ v btry reqd, neon bulb element, case, rect, hard wood plastic or mtl, excl wire leads 8½ in lg, 3½ in wide, 4 in h, wire lead 38 in pos lead lg, 38 in neg lead lg, 38 in h tension lead lg, sp clip type term.

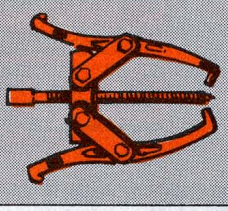
FSN 6625-255-1449 **ORD**

MULTIMETER: range 0 to 5000 v dc in five steps, 0 to 5000 v ac in five steps, 0 to 500 ma dc in three steps, 0 to 40000 ohms in two steps, 3% accuracy on dc range, 5% accuracy on ac range, 1000 ohms per v ac/dc range sensitivity, operating power requirements dc, 1.5 v, int source, 3 1/16 in w, 3 9/16 in thk, 5 7/8 in h overall dim, plastic case, for general purpose use, w/e.



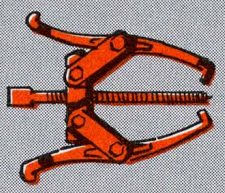
FSN 6625-543-1438 **ORD**

PULLER, MECHANICAL: gear & brg, dble-end grip, two jaw, exter 0 to 6 in spread range, 3¼ in reach.



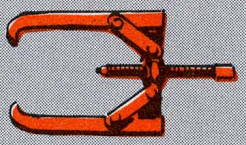
FSN 5120-595-9304 **QM**

PULLER, MECHANICAL: gear & brg, dble-end grip, two jaw, exter 0 to 8 in spread range, 5½ in reach.



FSN 5120-595-9305 **QM**

PULLER, MECHANICAL: gear & brg, sgle-end grip, two jaw exter 0 to 12 in spread range, 11 in reach, w/ex pr of jaws 0 to 14 in spread range, 14 in reach.

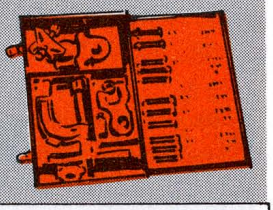


FSN 5120-542-2357 **QM**

PULLER, MECHANICAL: steering gear arm, univ type.

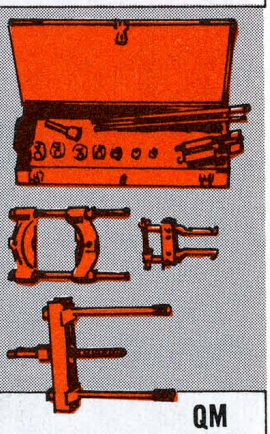
FSN 5120-387-9607 **QM**

PULLER, STEERING WHEEL: "C" shaped puller body, w/adapters.



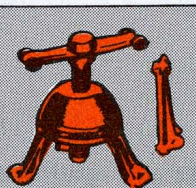
FSN 5120-620-0020 **QM**

PULLER KIT, MECHANICAL: gear & brg, type 7, size 3, w 4½ in, 9½ in, & 16½ in lgs, type II, size 2 type 12, size 3 attachment, type 17, class 2, style A, sizes 2, 3, 6, 8, 9, 10 & 12 adapters, in mtl bx.



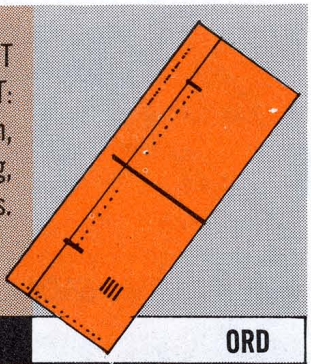
FSN 5120-423-1596 **QM**

PULLER KIT, MECHANICAL: wheel, w/short jaws stud nut set, axle protector, & mtl bx.



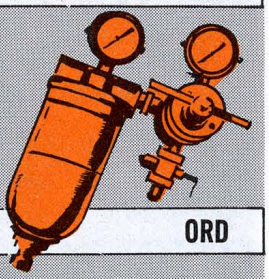
FSN 5120-587-4151 **QM**

SCREEN, HEADLIGHT BEAM ADJUSTMENT: unmtd univ type, cloth, white surface, 10 ft lg, 42½ in h, adj ref lines.



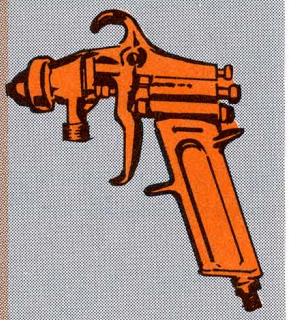
FSN 4910-240-7529 ORD

SEPARATOR, OIL AND WATER, SPRAY GUN: one regulator, wall type mtg.



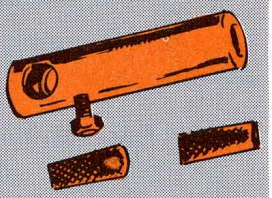
FSN 4940-242-4100 ORD

SPRAY GUN, PAINT: nonbleeder type, designed for hand operation, air cap exter mix type, 4½ cfm rated max air consumption, rated at 50 to 60 lb pressure, ¼ NPSH air, ⅜ NPSH fluid.



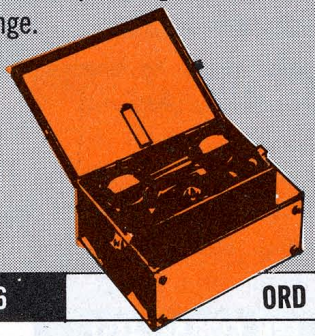
FSN 4940-261-8414 ORD

STUD REMOVER AND SETTER: wedge type, ¼ in to ⅝ in stud dia range cap, ½ in female sq-drive.



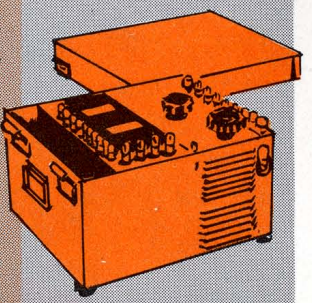
FSN 5120-596-0980 QM

TACHOMETER, ELECTRIC NONSELF-GENERATING: engine, secondary type, pri type cam dwell meter, 6/12/24 v vehicle btry operated, 0 to 1000 & 0 to 5000 rpm ranges, 0 to 50 deg dwell meter range.



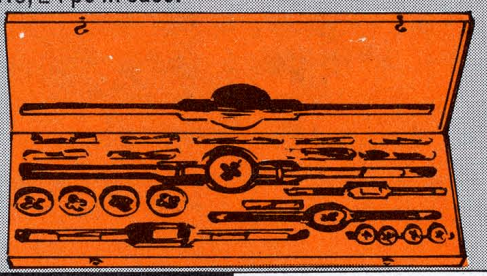
FSN 4910-395-1996 ORD

TEST SET, LOW VOLTAGE CIRCUIT: hv-duty voltage ranges 0-1, 0-10, 0-20, & 0-50, amp ranges 3-0-10, 15-0-50, 30-0-100, 150-0-500, 3000 w var load bank, 0.2-15 amp var field rheostat.



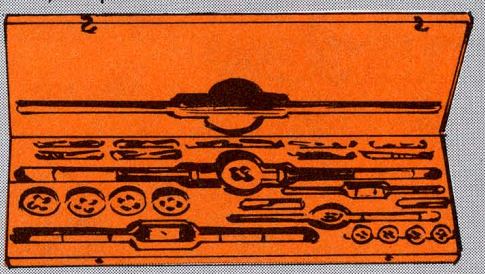
FSN 4910-092-9136 ORD

THREADING SET, SCREW: w/rd split dies, stocks, taps, & two wrenches, ¼-20NC to 1-8NC, 24 pc in case.



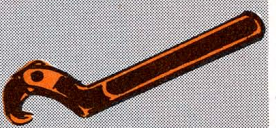
FSN 5180-448-2362 ORD

THREADING SET, SCREW: w/rd split dies, stocks, taps, & two wrenches, ¼-28NF to 1-14NF, 24 pc in case.



FSN 5180-422-4975 ORD

WRENCH, SPANNER: adj. hook, ¾ in to 2 in circle dia, $1\frac{1}{32}$ in thk of hook.



FSN 5120-288-6468 QM

Connie Rodd's

"SHORT 'N SWEET DEPT"

Could be you can take a watch apart, leave out some of the wheels, and have it run real good—could be.

But what you **can't** do is get an oil pressure control valve assembly to work right without all its parts.

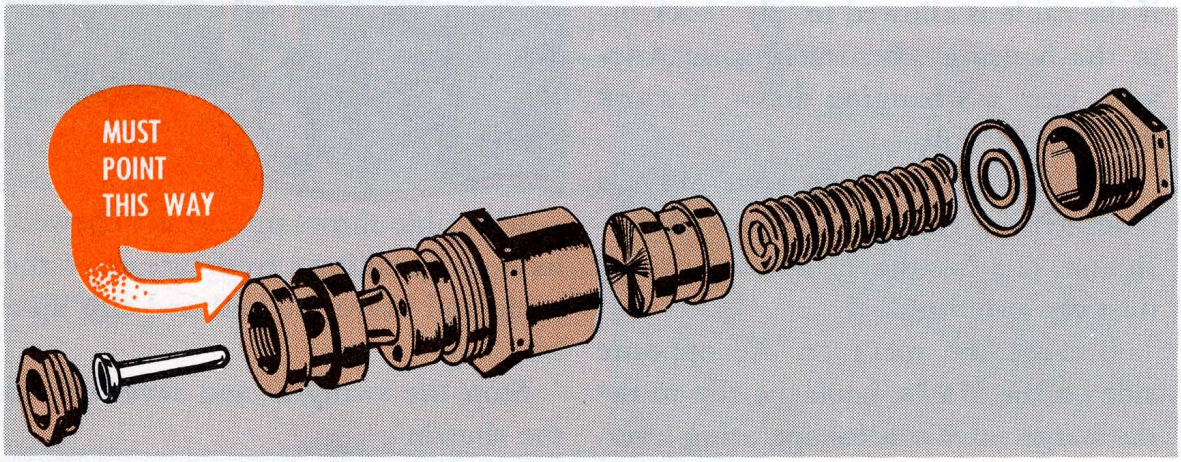
If you find one of your track vehicles with a continental AOSI-895-5, 895-5M, AVI-1790-8 or AVDS-1790-2 engine having extra high or extra low oil pressure trouble could be somebody left the valve out of the valve assembly . . . or assembled it backwards.

These are the track vehicles involved . . . M8A2, M41A2, M41A3, M42A1, M44A1 and the new M60.

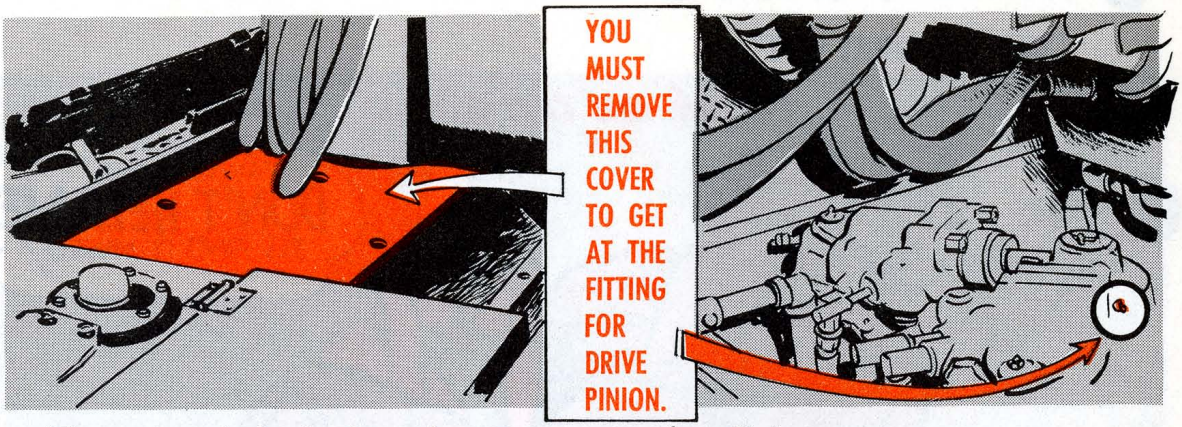
If parts of the valve are put in backwards, or a piece of it is left out entirely, the valve is going to throw your oil pressure 'way off. If it's too low, it'll damage the engine. When too high, it'll burst the oil coolers.

So . . . if you are having that kind of trouble, ask your Ordnance support to have a look-see at your oil pressure control valve assembly.

It should have all the pieces, and be put together like so . . .



Take it off



Those three holes in the swing motor cover on your M62 wrecker are mighty handy for getting at most of the lube fittings on the swing motor.

But about the only way you're going to hit the fitting for the drive pinion is to take off the cover.

If you figure removing the cover is work and don't bother with the fitting, you're setting up the swing motor for rusty gears and bearings, which'll cause you a lot more work.

Cable chewin'

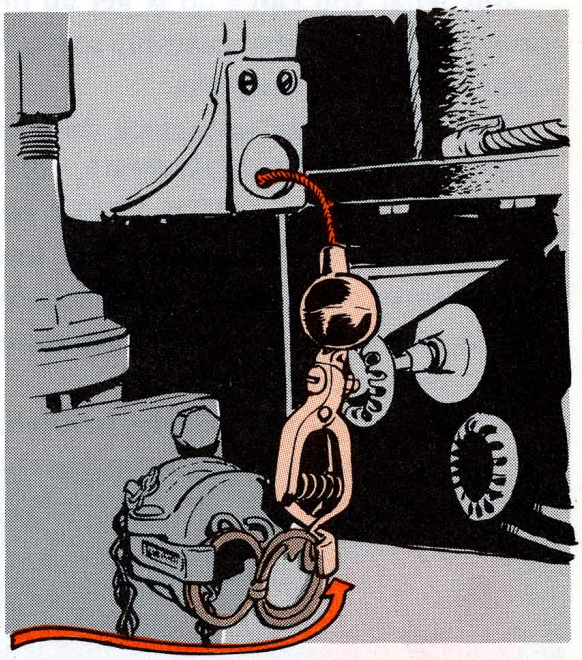
The static ground cable on M49 and M49C gasoline tankers (with segregator kits) needs to be tied down.

If it isn't, the cable'll get a good chewin' from whipping around on the edge of the reel housing outlet hole.

When you operate the tanker the weight of the ball and alligator clip tend to drag the cable from out of the housing. This drag-out is made easier if the cable is allowed to "fly" back into the housing when reeling in. Anyway, once it's hanging down, it starts its whippin' job.

To keep the cable on your M49C's from getting chewed just hook the alligator clip to the gravity discharge dust cap coupling.

Because the reel's on the opposite side on the M49's, hook the clip to the discharge valve control operating lever.



If a cable shows up already chewed, fix it up by taking a fresh bite up on the cable and move the ball and clip up a bit.

Stop the swingin' and save it from the chewin'.

Getting the shaft?

Maybe you haven't run into it yet—but you could be heading for trouble with your M185 2½-ton truck-mounted repair shop.

You could be if you're running the electrical equipment, tools, etc. on the truck . . . and then not moving the truck around after you're through for the day.

Here's the story. The repair shop equipment gets its power by way of the power takeoff. The power takeoff gets lubed while it's moving. But, seeing's how the transfer is in neutral and no gears are moving, no oil is getting to the upper input shaft in the transfer transmission.

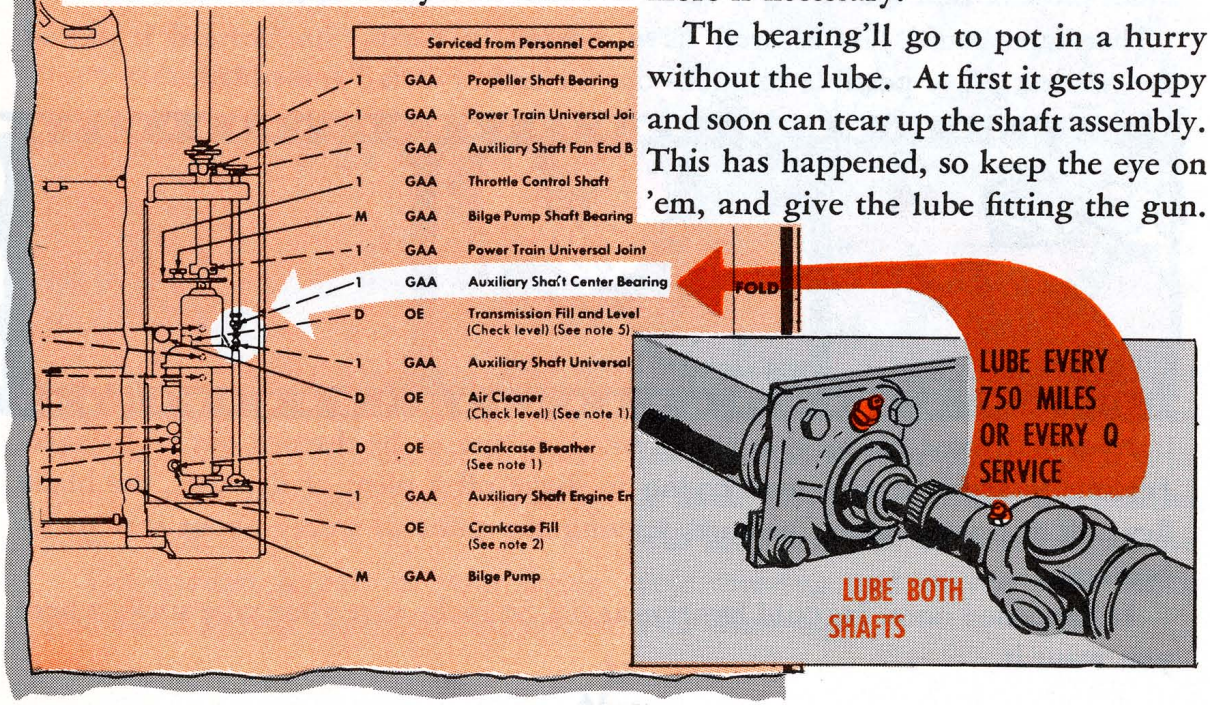
The only cure for that—right now—is to run the truck around the area every day so the input shaft gets hit with oil.

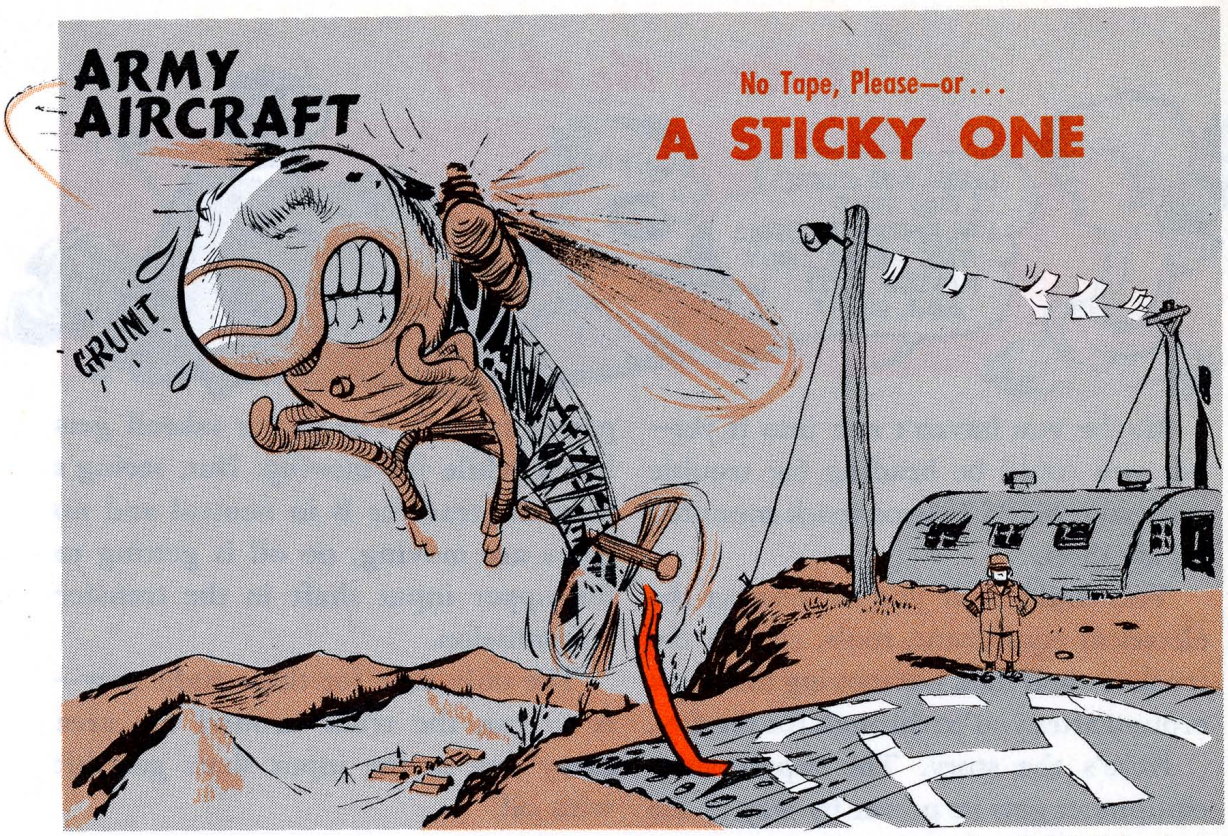
Lube change

When lubing your M59 APC or M84 SP 4.2 Mortar, the interval that the auxiliary shaft center bearing gets lubed has to be changed a bit.

'Stead of the 1000 miles now spelled out in LO 9-7002 (Jan 1958), hit them with GAA at least every 750 miles or more if necessary.

The bearing'll go to pot in a hurry without the lube. At first it gets sloppy and soon can tear up the shaft assembly. This has happened, so keep the eye on 'em, and give the lube fitting the gun.

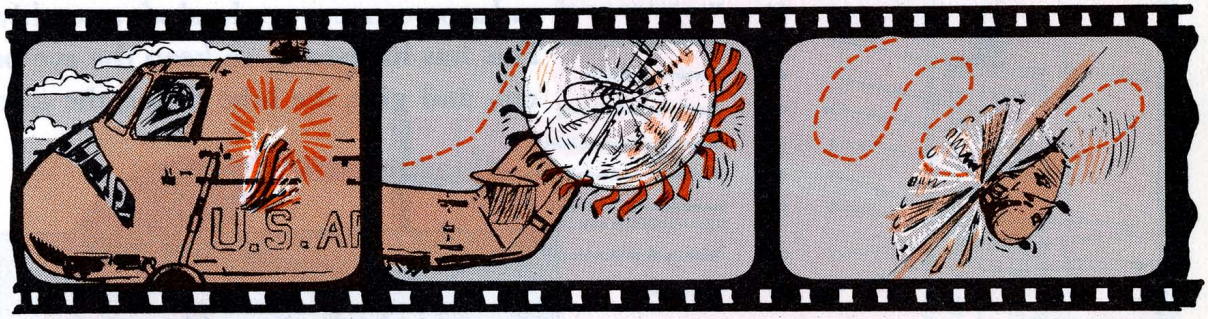




Certain things you do without thinking can set the scene for "ticklish situations" or "hairy incidents." But now here's a practice that creates what you might call a "sticky clobber."

Seems one air outfit was doing a job that required putting tape on the outside of one of its choppers. (Doesn't matter what type—tape's tape.) So when that chopper went roaring off into the blue, the blast from its slip stream ripped a small piece of tape loose.

That tape could just as well have floated to earth, but instead it picked the nastiest place possible to stick—on the end of a tail rotor blade.



Now tail rotor blades don't need much excuse to be thrown out of balance. Feeling as annoyed as a man trying to shake off a piece of flypaper, the blade flew off for some green pasture, leaving the pilot to worry about this sticky business.

It happened once. It could happen again. So make sure your tape sticks where you want it.

IT'S A CHEMICAL CORPS ITEM

Maybe the trouble some of you aircraft mechanics have been having trying to get Kit, detector, FSN 6665-283-0654 and two indicator tubes FSN 6665-276-7545 is due to the fact that your requisition's not going to the right tech service.

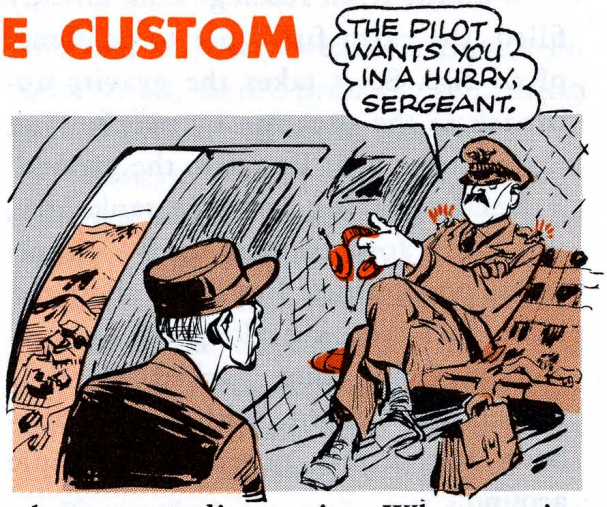
When PS Issue 87 told you about the super sniffer so you could check the carbon monoxide in your aircraft the kit belonged to Ordnance. Not so now —it's a Chemical Corps item.

Might be a good idea to send a letter along with your request for the kit telling why you need it. This'll help you get it. (See AR 725-5).

Once the item's included in the Army Aircraft Organizational Maintenance tool set A supplemental, set B, or set C and you're authorized one of these sets, then you won't need the letter.

ATTENTION CREW CHIEFS!

BREAK THE CUSTOM



Some crew chiefs sorta been getting in the habit of handing over their headset to the ranking passenger on board.

Now this is all very nice—full of military courtesy and all that. But think about why you're getting that flight pay next time you get the urge to be polite.

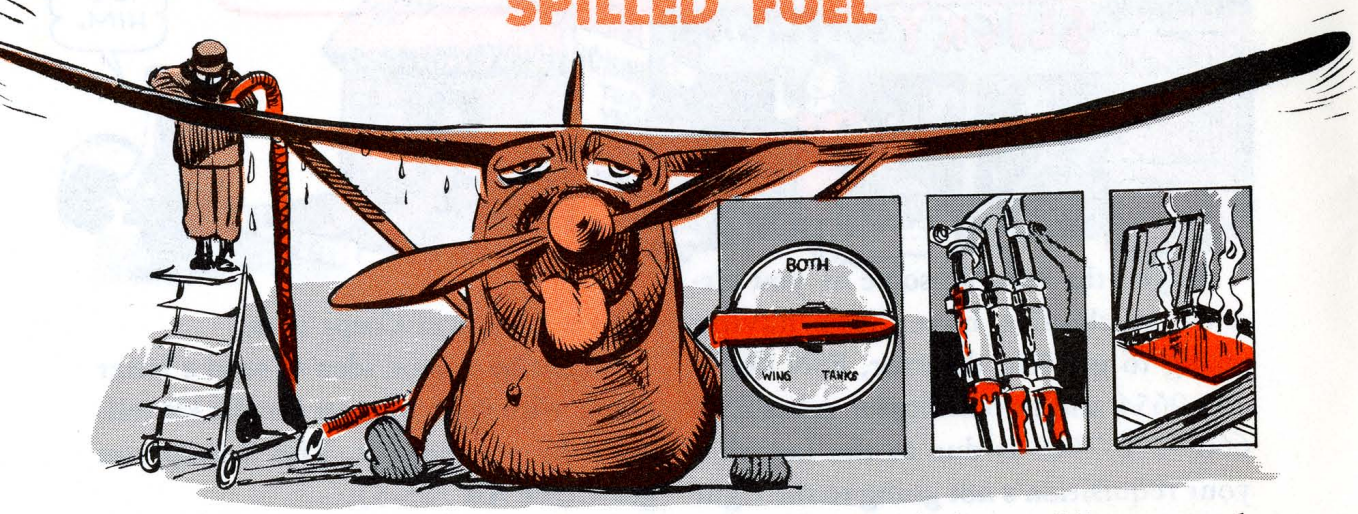
A crew chief is a necessary part of a flight crew, or **team.** Every member of that team has a **responsibility** to the others, which includes being able to communicate instantly with each other. How can you be available for an emergency when someone else's wearing your headset?

The headset is part of your flying gear for a second reason. It cuts down the surrounding noise. When you're putting in long hours upstairs, noise is something to think about.

If you want to keep drawing flight pay, don't hand that headset over to anyone—unless your pilot OK's it first. A habit of flying without the headset will only help you do two things—lose your hearing and maybe your MOS. You listening?

COULD BE A LEAK...

SPILLED FUEL



There's more than one way to create fire hazards while handling fuel. One of the latest tricks is to leave the fuel transfer control lever in your Beavers (L-20) turned on while refueling the wing tip tanks.

With the front fuselage tank already filled, the extra fuel's got to go someplace else. So it takes the gravity approach to the situation by overflowing through the vent line onto the ground.

Besides leaving your tip tanks dry, this bit of forgetfulness leads to interesting possibilities. Just think about the loose fuel creeping along the ground among your other parked aircraft! Especially at night, with hardly anybody but a few guard duty people around.

And sometimes that spillage may not be as noticeable as you might think . . . like when it overflows into the bottom of the fuselage and runs back down to the tail cone before spilling onto the ramp.

That's just what happened to one Beaver, too. Naturally, there was a loose connection, worn gasket, bad hose or something else allowing the juice to leak out before it got to the vent line.

So, besides checking that tip tank selector lever to see if it's in the OFF position and checking the vent line for spillage, you've got to consider internal leaks. The best way is to keep your sniffer going after you're finished refueling. Any strong odor of gas ought to make you suspicious enough to raise the floor panel at the rear of the cabin.

If the odor gets stronger or you see loose fuel laying along the top of the exposed fuselage tank, it's a smart idea to ground that bird until somebody can make a detailed checkout of the fuel system for leaks.

It only takes one spark.

Assume it's Contaminated
And ALWAYS . . .

LOOK BEFORE YOU FUEL

You just never take anything for granted in this man's Army and that goes double when it comes to keeping your nose and good eye zeroed in for signs of contamination during refueling.

Just because the last tankful of gas seemed OK is no guarantee the next one will be as clear, bright and sweet smelling. So every time you pick up a fuel hose, check the nozzle for hints of water, dirt or scxtrm.*

Check out any of your **suspicions** by running off some fuel into a clean container . . . and be careful not to spill or splash any by sticking the nozzle at the bottom of the container before you squeeze.

Now you can't go by the color of the fuel to let you know something's wrong. JP-4 fuel, for example, can range from a brownish straw to an almost white shade. But the slightest cloudy, milky or muddy appearance is a dead giveaway you've got impurities in your bird juice. Also, if the odor of the fuel is pretty weak, or there's no odor at all, there's probably something mixed in there diluting that fuel.

These're symptoms of dangerous contamination levels and you'd be smart to be suspicious of what that tanker was feeding your bird by checking both the aircraft fuel sump and the tanker's compartments. If things doublecheck **wrong**, pass the word to **everybody** concerned real fast.

If you find contaminated fuel, that word **everybody** includes the tower, operations, your maintenance supervisor, POL section and the CO. Being extra safety conscious might annoy a few people who are always in a rush—but it's never been known to hurt anybody. Can't say the same for carelessness.

*ANYTHING THAT DOESN'T LOOK, FEEL OR SMELL LIKE FUEL.

TC and Sig...

SPLIT THE CHORES

Keep your guard frequency tuned in for this special message about the new look in publications covering avionics operation and maintenance.

The Transportation and Signal Corps got together and decided to divvy up the publication responsibilities this way:

TC is including Signal Operation and PM instructions on electronic equipment in with its own publications on the aircraft. That way you won't have to go to two different TM's at organizational level.

But the Signal Corps job of supporting the equipment stays the same. In other words, Signal Corps still has the responsibility for setting the maintenance policy—making sure the equipment and parts info is accurate, supplying all Signal items, and doing the field and depot maintenance chores.

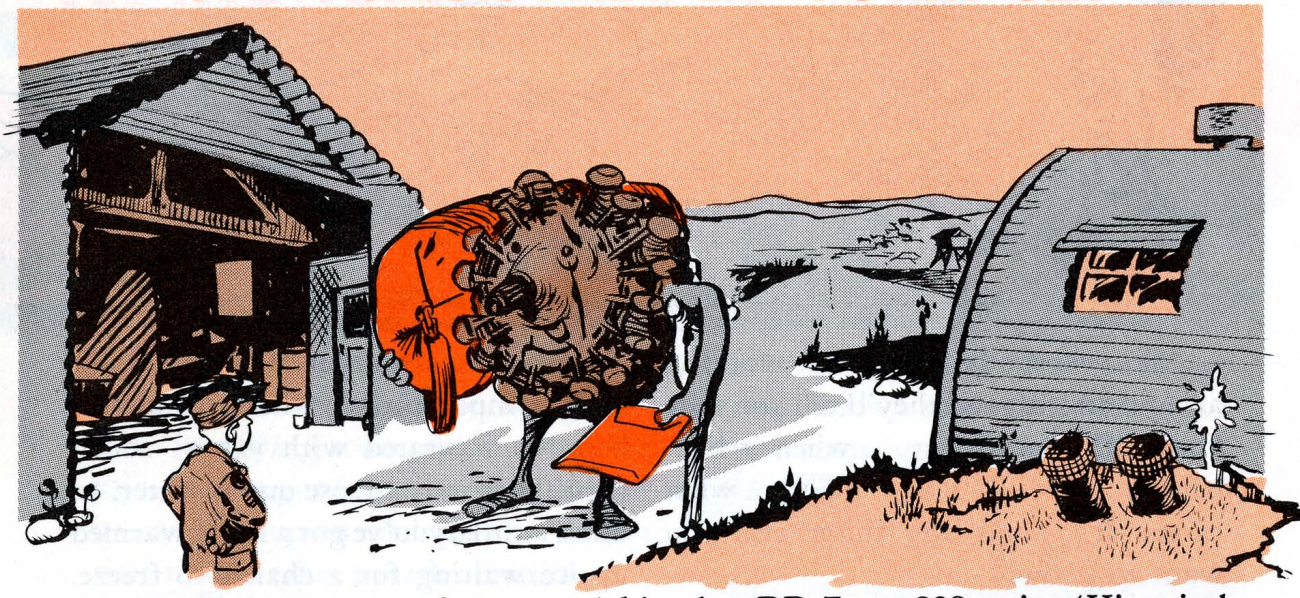
So the new -10 and -20 manuals covering each aircraft will include instructions on the avionics gear installed and will be printed up by TC under the TM 55-series. But the -20P will be split up between TC and Signal because TC supplies and identifies the aircraft components, while Signal does the same for the avionics equipment.

Both tech services will also print up separate 3rd through 5th echelon maintenance manuals to individually cover support of their own equipment.

For example, one aircraft and its electronic gear might be covered by the multi-part manual system like this:

ECHELON		ALL-IN-ONE (AIRCRAFT & AVIONICS)	SEPARATE	
			AIRCRAFT	AVIONICS
FLIGHT CREW		TM 55-1510-260-10		
GROUND CREW	INFO	TM 55-1510-260-20		
	PARTS		TM 55-1510-260-20P	TM 11-1510-260-20P
SUPPORT USE	INFO		TM 55-1510-260-34	TM 11-1510-260-35
	PARTS		TM 55-1510-260-34P	TM 11-1510-260-35P

THE FORGOTTEN DD FORM 829



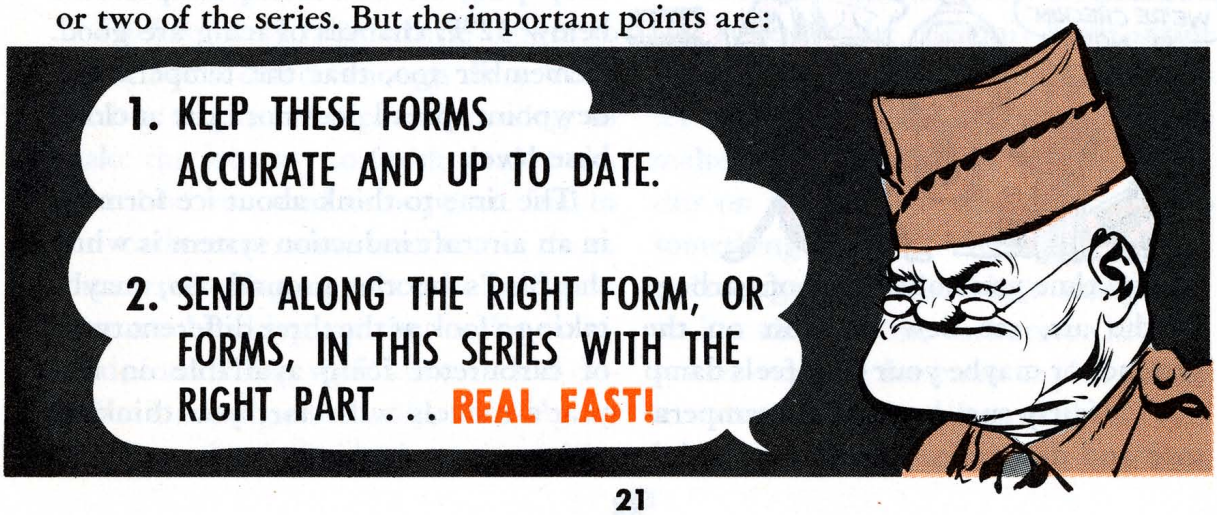
It's practically part of your tool kit—that DD Form 829-series (Historical Record for Aeronautical Equipment . . . Technical Instruction Compliance Record . . . Significant Historical Data.)

The whole reason behind this DD Form 829-series is that, if they're accurate and up-to-date, they tell the overhaul people exactly what's happened to that item and what action has to be taken. Then they don't waste time and money starting from scratch because somebody forgot to give the history on that piece of equipment . . . repairs are faster . . . and it'll be ready for reissue to a field unit sooner.

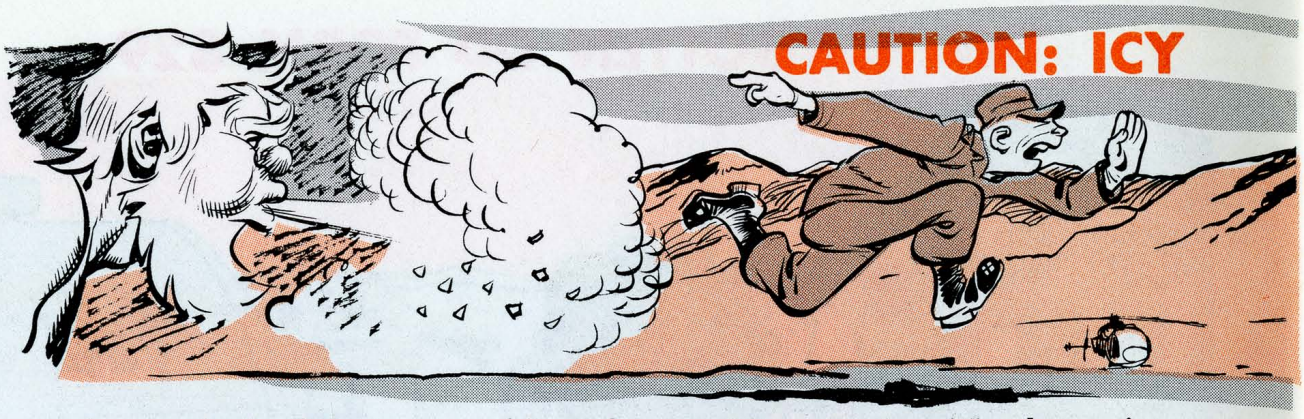
So, it comes in handy to know that Change 5 (2 June 60), to TB AVN 5 tells you **what** historical records go along with **what** components. You can keep up to date on these records by watching for future publication changes or revisions.

The TB says you send along the full series (829, 829-1 and 829-2) every time you send an aircraft or engine or components of either back for overhaul.

Since some components don't need all three forms, you'll have maybe only one or two of the series. But the important points are:



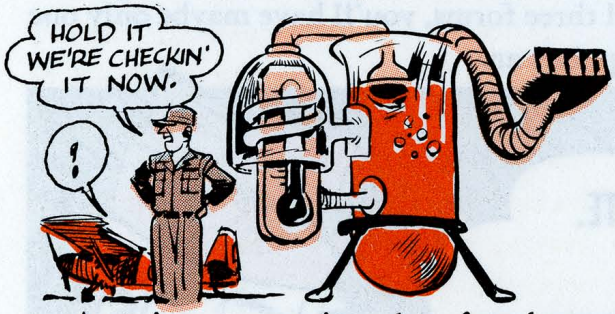
CAUTION: ICY



Ask everybody flying or working around aircraft and they'll tell you they know all about icing . . . when it happens . . . how it takes place. . . what causes it . . . and any thing else you want to know.

They could be right and they could be wrong. But half the time they give themselves away by talking about icing under airborne conditions, never realizing that carburetor icing troubles can start before that bird ever leaves the ground . . . and with a cloudless sky up above, too.

To start with, the big trouble makers are temperature and humidity, mixed together in the **wrong** ratios. Now since these ratios are found at ground level as well as upstairs, they can't be ignored during an engine runup or taxiing.



Any time you notice a lot of garbage in the air, see dew or frost on the ground, or maybe your skin feels damp —it's a fairly sure bet that the temperature and dew point have been playing footsy with each other. The dew point is the temperature at which the air be-becomes saturated with vapor, which then starts to condense out as water. In other words, you've got a lot of warmed up ice waiting for a chance to freeze.

It takes a lot of heat to change bird gas from a liquid to a vapor. Most of that heat comes from your carburetor air. As the air gives up its heat, it can drop the carburetor temperature as much as 40°F. Whenever this temperature drop is bigger than the outside temperature-dewpoint spread **and** this drop puts the carburetor temperature below 32°F, chances of icing are good. Remember too, that the temperature-dewpoint spread does not exist at cloud base level.

The time to think about ice forming in an aircraft induction system is while the bird's on the ground. So, maybe taking a look at the three different types of carburetor icing available on this year's models will start you thinking twice.

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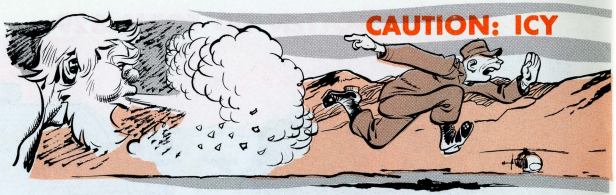

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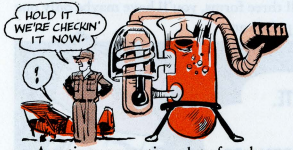

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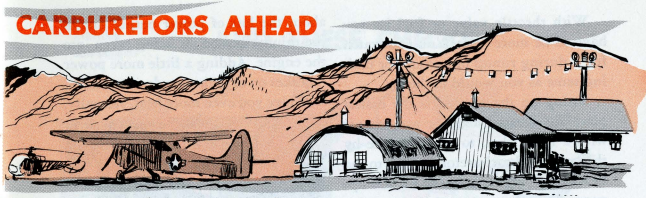
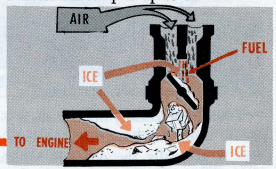
CARBURETORS AHEAD



First off, **impact ice** can form on a parked aircraft as well as a flying one. That low flying snow, sleet or freezing rain—with a good driving wind behind it—can clog up an air inlet filter in less time than it takes to talk about it.

Throttle valve ice can hit you as soon as you turn over the engine. Any partly closed valve settings will give you a cooling effect because you're restricting the area of airflow around the valve. This type of icing can form with carb air temps at least as high as 80°F.

Fuel ice may take a little longer to form, but it can do enough dirty work during engine runup and taxiing to make the job easy to finish at altitude. That heat you need to evaporate fuel in the carburetor airstream comes from the surrounding air. Once the ice forms, it starts blocking up the intake manifold, interfering with mixture and distribution and, eventually, starving or flooding the individual engine cylinders. Under high humidity conditions, it's been known to show up when carburetor air temp is up to 80°F.



Going back over all of them, let's see what you can do to fight off each type of carburetor icing. Impact ice is usually less of a problem, because you can see it or feel it on the aircraft surfaces and assume it's also on the filter. As far as the induction system's concerned, it's just the exposed filter you've got to worry about.

Since a lot of carburetor air preheating systems take their air from inside the cowling or nacelles, the clogged filter is by-passed and the ice never gets melted off in flight. But why settle for this on the ground, where you can do something about it? That's putting two strikes against the bird by making it fly on hot air from the carburetor heating system—calling for extra engine power to overcome the handicap of thinner air in the induction system.

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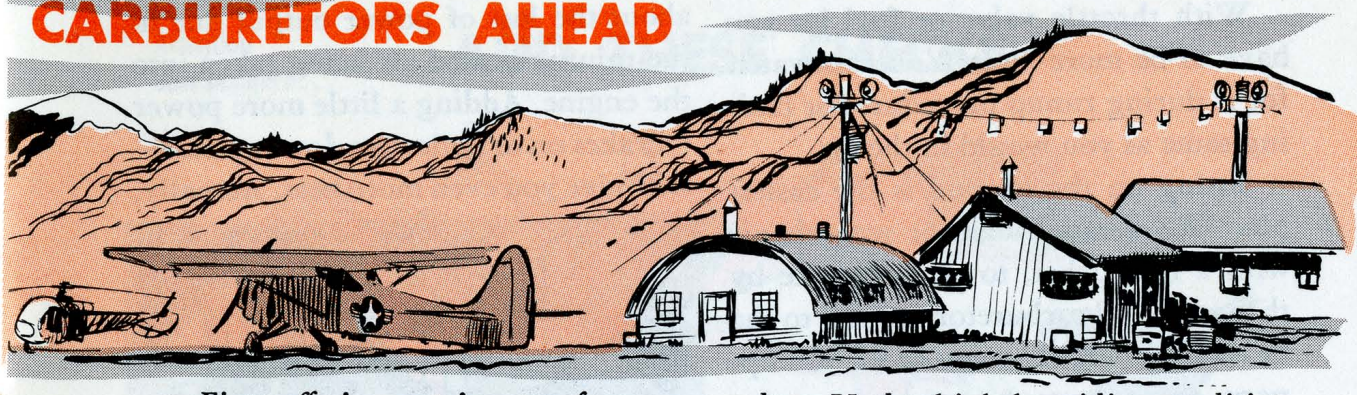

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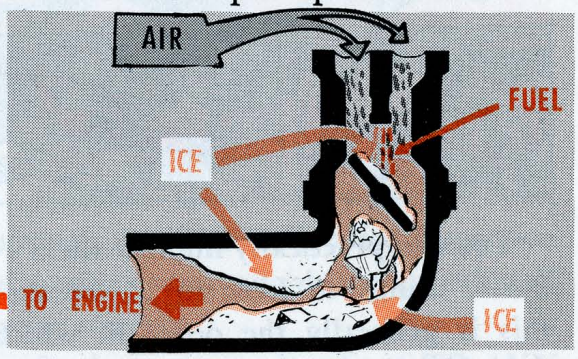

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With throttle valve or fuel ice you have to be more alert. You can watch for it during runup procedures or taxiing same as you would in the air.

Sitting on the ground is the easiest place for a rated man, or a mechanic with a taxi ticket, to check for ice by throwing full carburetor preheat to the beast at the slightest sign of RPM droppage at a constant setting . . . engine roughness . . . drop in MP . . . sticking throttle valve.

You can practically number them 1-2-3-4, things to look for . . . because this is generally the order in which these hints of icing will show up.

You might notice the same loss of power you'd get airborne showing up as a drop in RPM on rotary wing and fixed prop aircraft, or a drop in MP in constant speed prop jobs. When you have to keep opening the throttle to maintain a constant RPM or MP—be suspicious. On the other hand, your first clue may be a rough running engine without any noticeable drop in the instrument readings.

Clues or no clues, though, the only way to be sure is to use full preheat for about 15 seconds. A rise in RPM or smoothing out of the engine means you probably have icing. So throw the heat to her again.

Another nice thing about making this check on the ground is that you can use full preheat without worrying about the loss of power output due to the thinner heated air being taken into the engine. Adding a little more power —brakes on or collective down, please— will give you even more heat. Actually,

you can push your intake temperatures up to 130°F without trouble . . . and that's based on past experience.

From here on you use your own experience to tell you when it's safe to cut back on the heat. With your good eye on the instruments, come back to the normal engine idle setting gradually. Then make another runup check without heat—or with as much heat as necessary to keep your RPM and MP in safe operating range.

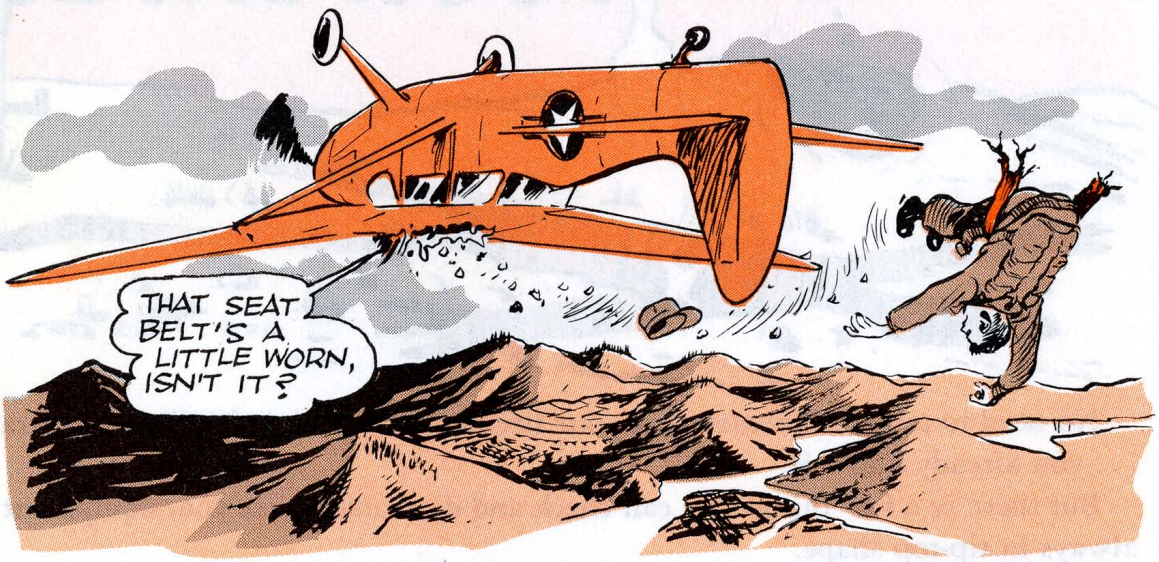
While we're on the subject, remember that each gage is allowed a certain percentage of calibration leeway. So operating with the carburetor heat gage needle in the green doesn't guarantee you a thing.

A good general rule on using carburetor preheat is to increase it in proportion to the amount your visibility's reduced by haze or mist.

The less the visibility, the more water vapor or moisture floating around.

Attention
Bird Doggers . . .

ADD THESE CHECKS



Safety belts and first aid kits in all your Bird Dogs (L-19's) now come under the same inspection standards used in other -6's.

In case you didn't notice, Change 1 (Oct 59) says the special inspection requirements in your TM 1-1L-19A-6 includes weight testing the belts every 12 months—or after cleaning or repair. It also says the kits have to be turned over to the medics every 180 days for a look at the contents.

Besides these -6 requirements, though, some more detailed inspection directions are available for use with **all** your aircraft.

So, keep a copy handy of TB AVN 10 (1 Dec 59) on "First Aid Kit, Airplane, Without Narcotics" and TM 1-13A1-1-1 (4 Apr 60) on "Repair, Cleaning, Inspection and Testing of Aircraft Safety Belts, Shoulder Harness and Miscellaneous Personnel Restraint Equipment."

Being part of the special Section V items in your -6, each check on the belts and kits has to be recorded on the aircraft's DD Form 781-4 (Aircraft General data). . . like it says in Part One of TB AVN 5 "Preparation and Processing of DD Form 781 (Aircraft Flight Report and Maintenance Record)." Para 83d in Section VII tells you to line out the old entry and make a new one each time you have to check either one of these items—or erase what's written in the "next due" column and write in the new time.

BE YOUR OWN INSPECTOR ON . . .

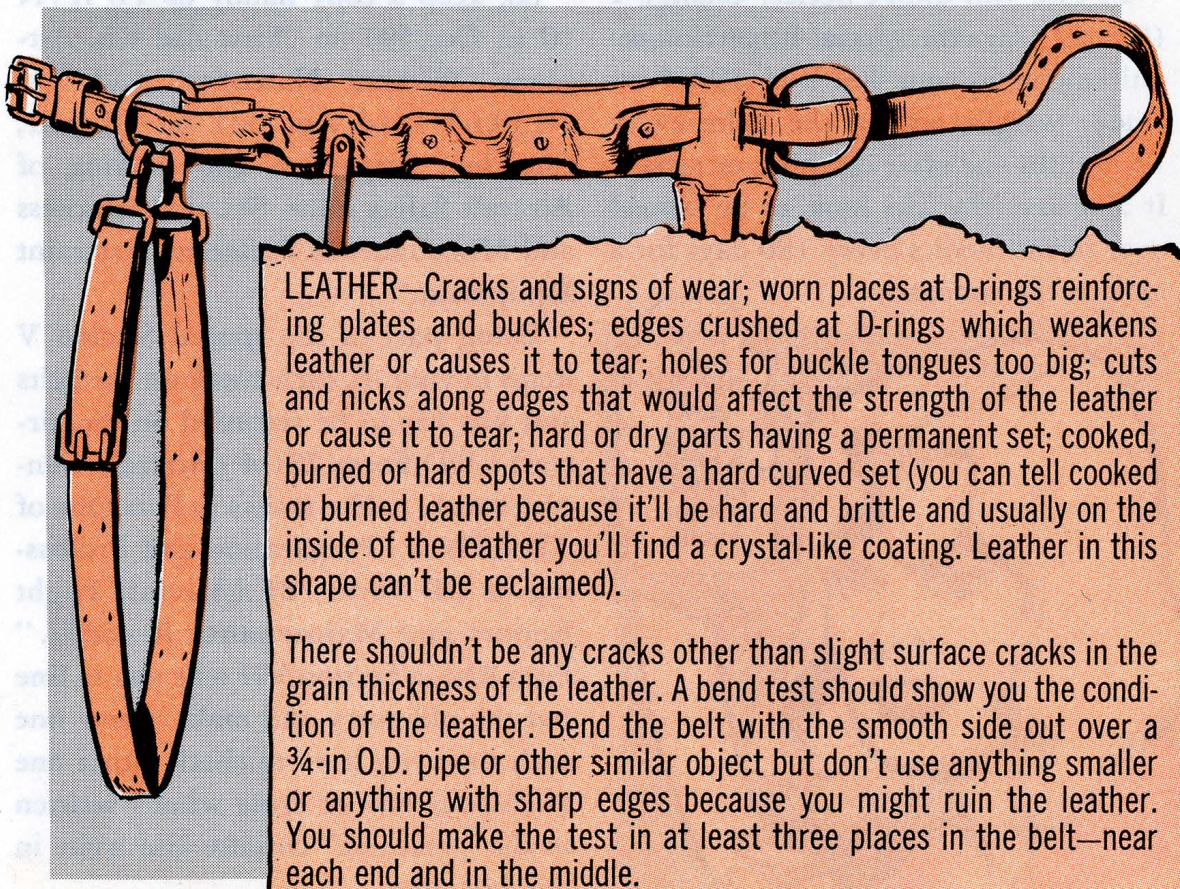
YOUR SAFETY

No need to tell you linemen that your life hangs on your safety belt and strap . . . you already know it.

But there're a few things you can check and do to make sure your equipment's always in tip-top shape.

In the first place, your lineman's belts, safety straps, tool holsters, climber straps and pads should be complete with all parts that're supposed to be with each item. And each item should be in as good a shape as a new item.

Here's what you look for:

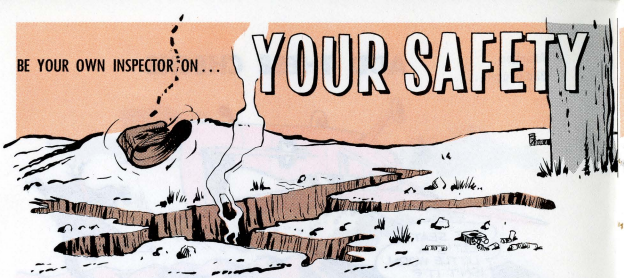


LEATHER—Cracks and signs of wear; worn places at D-rings reinforcing plates and buckles; edges crushed at D-rings which weakens leather or causes it to tear; holes for buckle tongues too big; cuts and nicks along edges that would affect the strength of the leather or cause it to tear; hard or dry parts having a permanent set; cooked, burned or hard spots that have a hard curved set (you can tell cooked or burned leather because it'll be hard and brittle and usually on the inside of the leather you'll find a crystal-like coating. Leather in this shape can't be reclaimed).

There shouldn't be any cracks other than slight surface cracks in the grain thickness of the leather. A bend test should show you the condition of the leather. Bend the belt with the smooth side out over a ¾-in O.D. pipe or other similar object but don't use anything smaller or anything with sharp edges because you might ruin the leather. You should make the test in at least three places in the belt—near each end and in the middle.

BE YOUR OWN INSPECTOR ON . . .

YOUR SAFETY BELT AND STRAP



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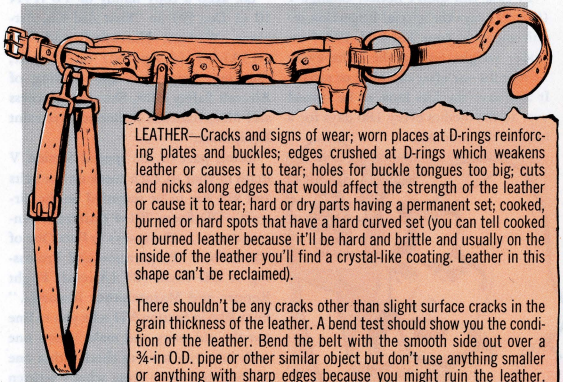

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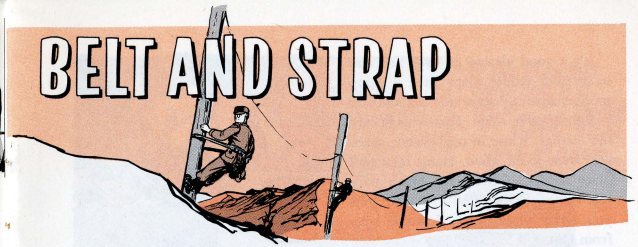
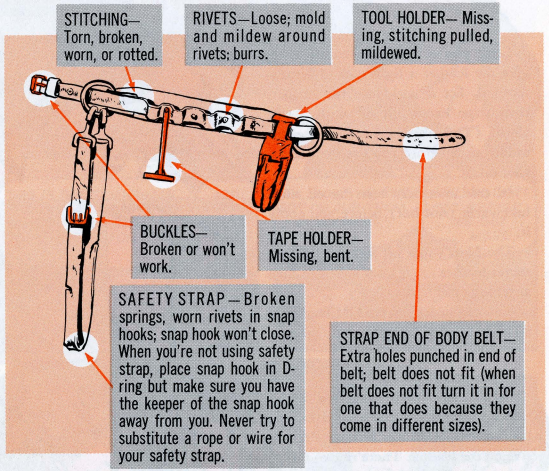


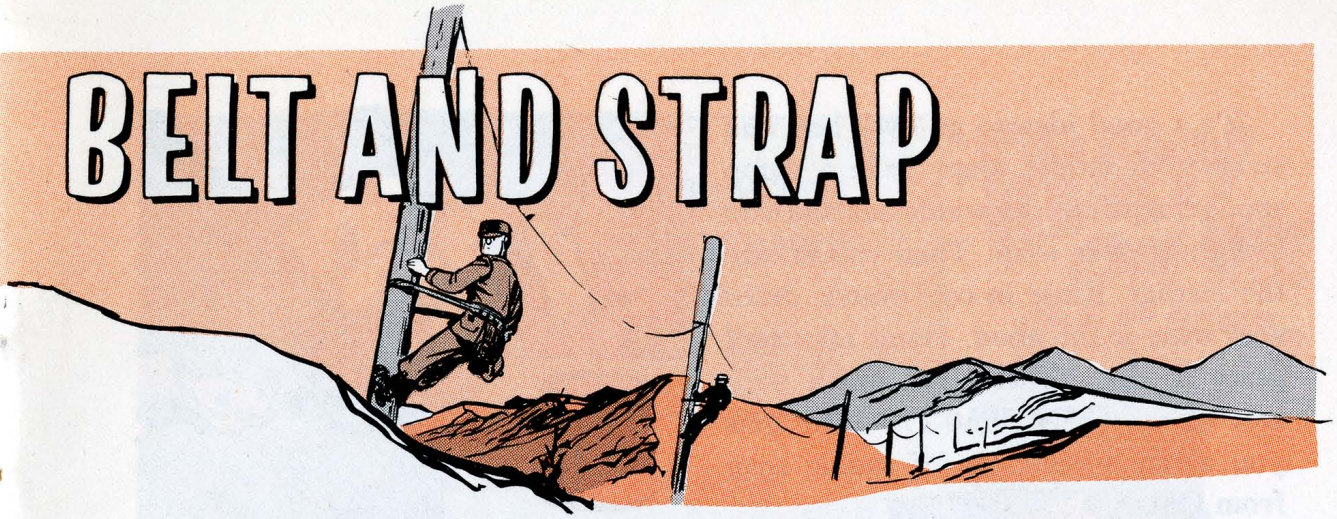


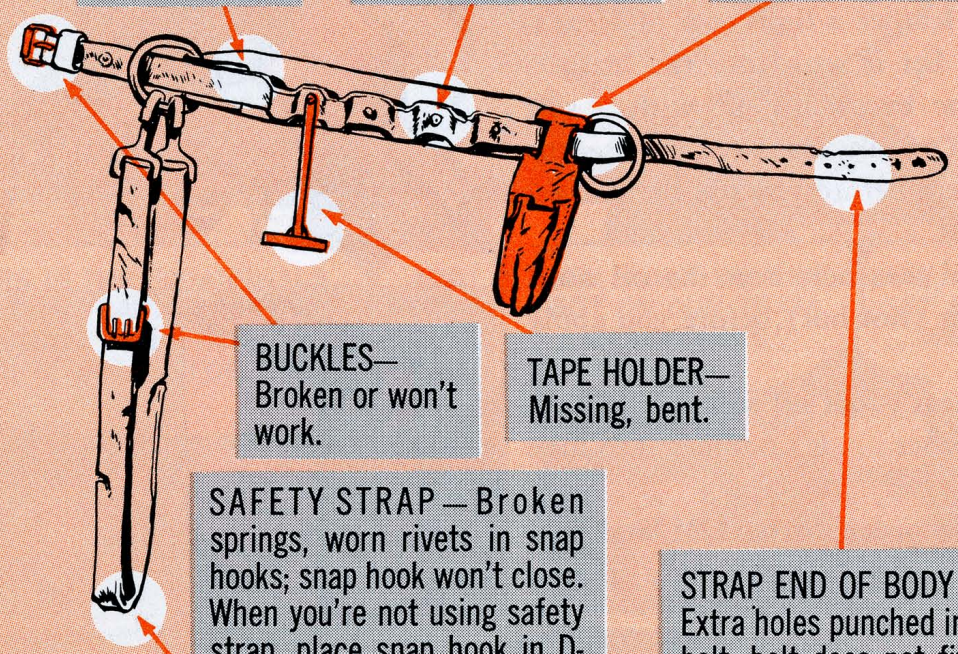
CARE OF BELTS AND STRAPS

Dampness is one of the main trouble causers with your belt and strap. It causes mold and mildew.

So when you're working in an area that's damp, or if you've been working in the rain, be sure you dry the belt thoroughly before you put it away.

BELT AND STRAP





STITCHING—Torn, broken, worn, or rotted.

RIVETS—Loose; mold and mildew around rivets; burrs.

TOOL HOLDER—Missing, stitching pulled, mildewed.

BUCKLES—Broken or won't work.

TAPE HOLDER—Missing, bent.

SAFETY STRAP—Broken springs, worn rivets in snap hooks; snap hook won't close. When you're not using safety strap, place snap hook in D-ring but make sure you have the keeper of the snap hook away from you. Never try to substitute a rope or wire for your safety strap.

STRAP END OF BODY BELT—Extra holes punched in end of belt; belt does not fit (when belt does not fit turn it in for one that does because they come in different sizes).

CARE OF BELTS AND STRAPS

Dampness is one of the main trouble causers with your belt and strap. It causes mold and mildew.

So when you're working in an area that's damp, or if you've been working in the rain, be sure you dry the belt thoroughly before you put it away.

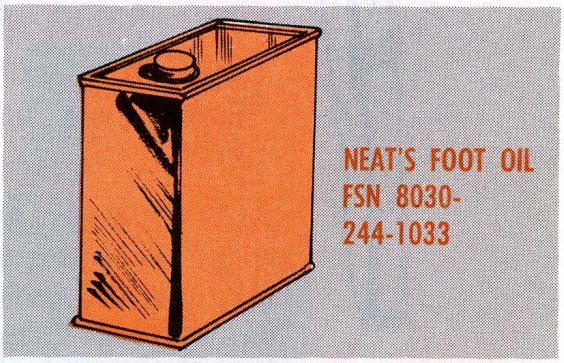
It's a good idea to go over belt and strap with saddle soap. Take a damp sponge, squeeze the water out and rub it lightly over soap. Then rub it into the leather. Rinse in cool water, drain and wipe it off good. Hang in a cool place to dry. When dry, polish with soft cloth. (FSN 7930-170-5467 gets you a one pound can of saddle soap from QM.)

Once you've used the saddle soap, give the leather a light coat of Neat's-foot oil. Let it soak into the leather, then wipe excess oil off with a soft cloth. (You always have to use the saddle soap before you use the Neat's-foot oil.)

In cold weather, heat the oil until lukewarm (**not** hot) before you apply it.

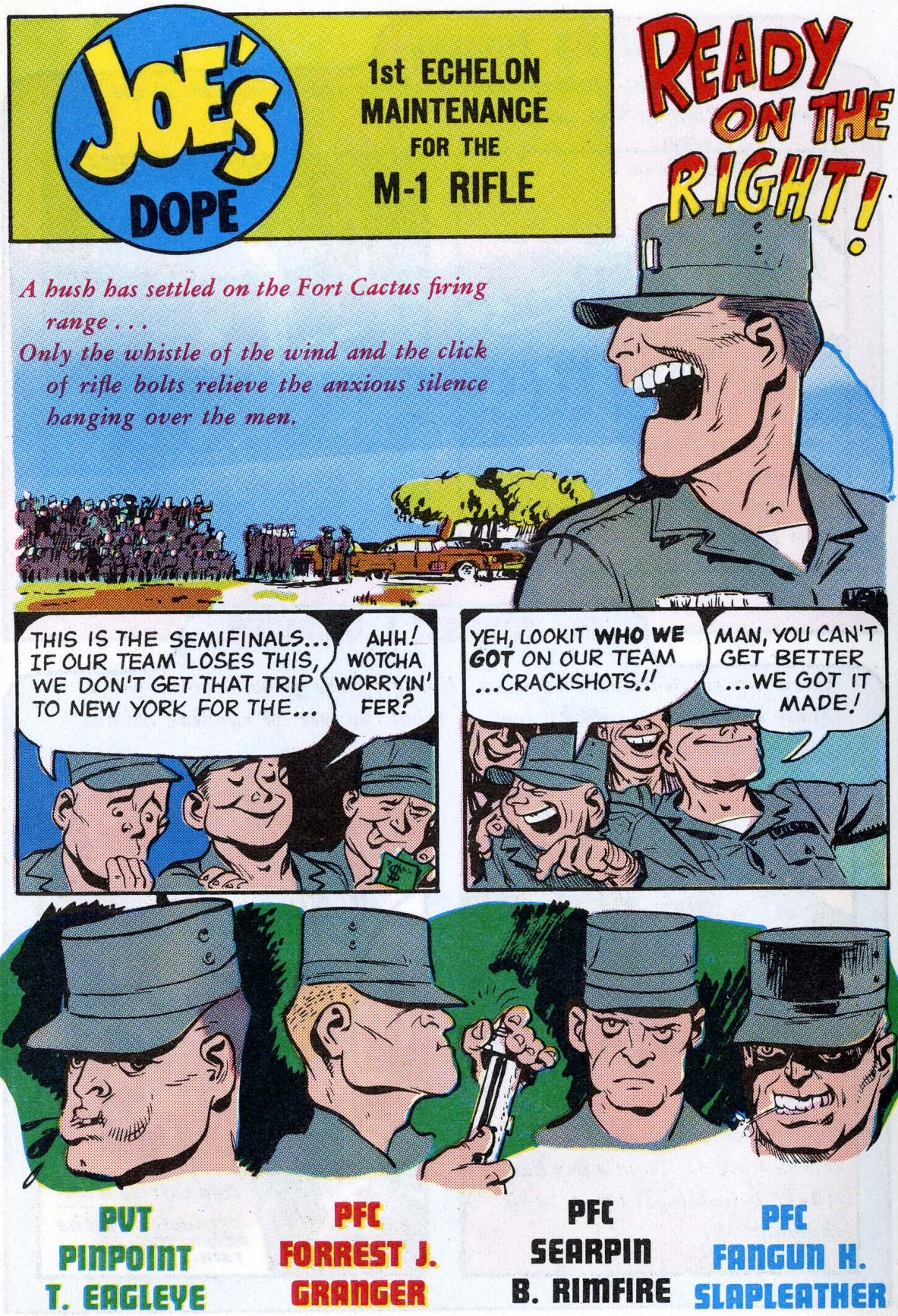
The Neat's-foot oil softens and preserves leather . . . it's not meant to lube anything else.

You can order it from QM, and FSN 8030-244-1033 will get you a gallon.



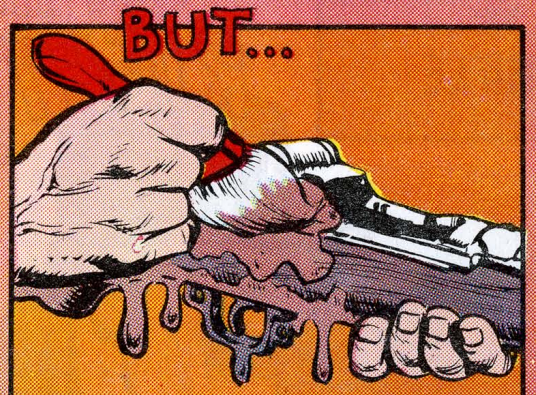
In climates where there's a lot of rain and humidity, it's a good idea to use Leather Dressing, Mildew-Preventive on the leather. There're two things to keep in mind when using the dressing: It's toxic so you shouldn't breathe the vapor or let the belt contact your skin; and the leather should be dried in the open air (but not sun).

FSN 8030-285-6338 will get you a pint can and FSN 8030-260-0736 will get you a gallon can from QM.


JOE'S DOPE
1st ECHELON MAINTENANCE FOR THE M-1 RIFLE
READY ON THE RIGHT!
A hush has settled on the Fort Cactus firing range . . .
Only the whistle of the wind and the click of rifle bolts relieve the anxious silence hanging over the men.
THIS IS THE SEMIFINALS... IF OUR TEAM LOSES THIS, WE DON'T GET THAT TRIP TO NEW YORK FOR THE...
AHH! WOTCHA WORRYIN' FER?
YEH, LOOKIT WHO WE GOT ON OUR TEAM ...CRACKSHOTS!!
MAN, YOU CAN'T GET BETTER ...WE GOT IT MADE!
PVT PINPOINT T. EAGLEYE
PFC FORREST J. GRANGER
PFC SEARPIN B. RIMFIRE
PFC FANGUN H. SLAPLEATHER

PVT PINPOINT T. EAGLEYE

Born and brought up in the hills . . . Born and weaned on a rifle . . . can hit a dime at 500 yards . . .

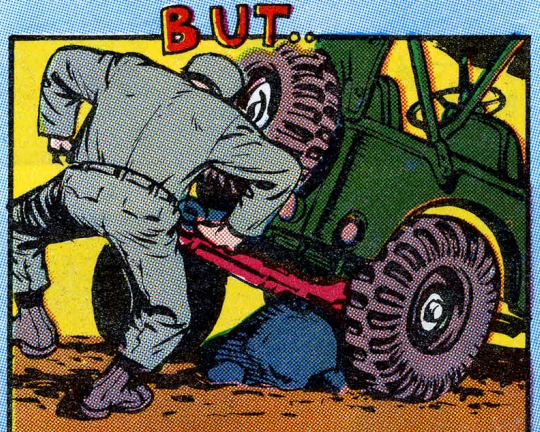


He's been sloppin' linseed oil all over his rifle . . . allowing it to gum up the metal parts of his piece.

Has a careless habit of flingin' his rifle aboard a truck before he gets on.

PFC FORREST J. GRANGER

Grew up in Alaskan wilderness, living off the game he could shoot. Made a fortune in rabbits' feet . . . (shot the feet off running rabbits . . . so's not to spoil the hide.)

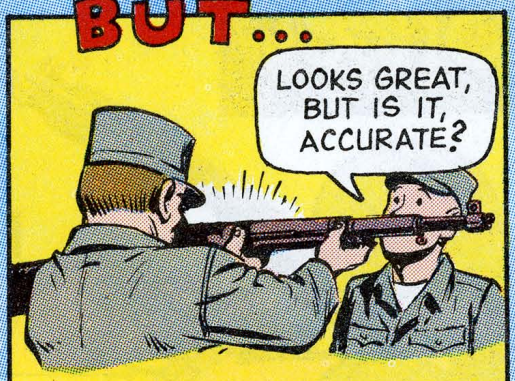


He's been using his rifle for everything . . . from a pry bar, jack handle . . . to a tack hammer . . .

And carried it un-protected in the rain...

PFC SEARPIN B. RIMFIRE

Mechanical genius back home . . . built hot rods and could shoot like a whiz.

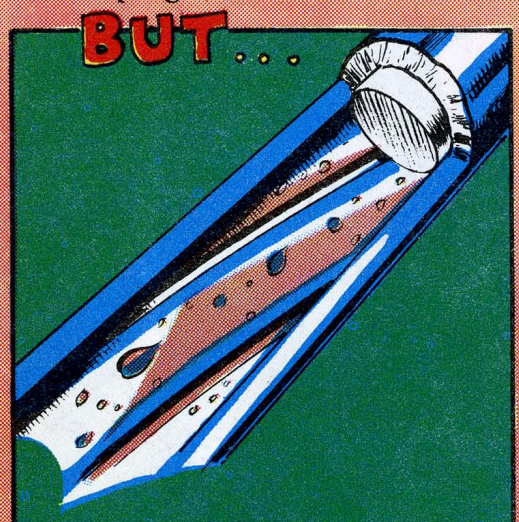


He couldn't keep his hands off the works. Kept making "improvements"... Filed down sight, trigger, etc.

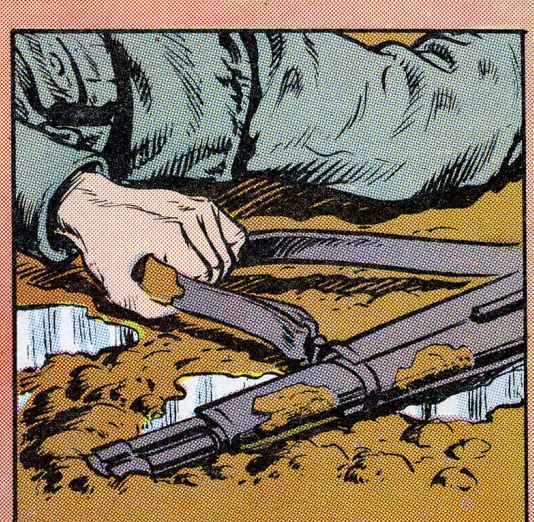
Swapped parts every time somebody showed up with a newer rifle than his.

PFC FANGUN H. SLAPLEATHER

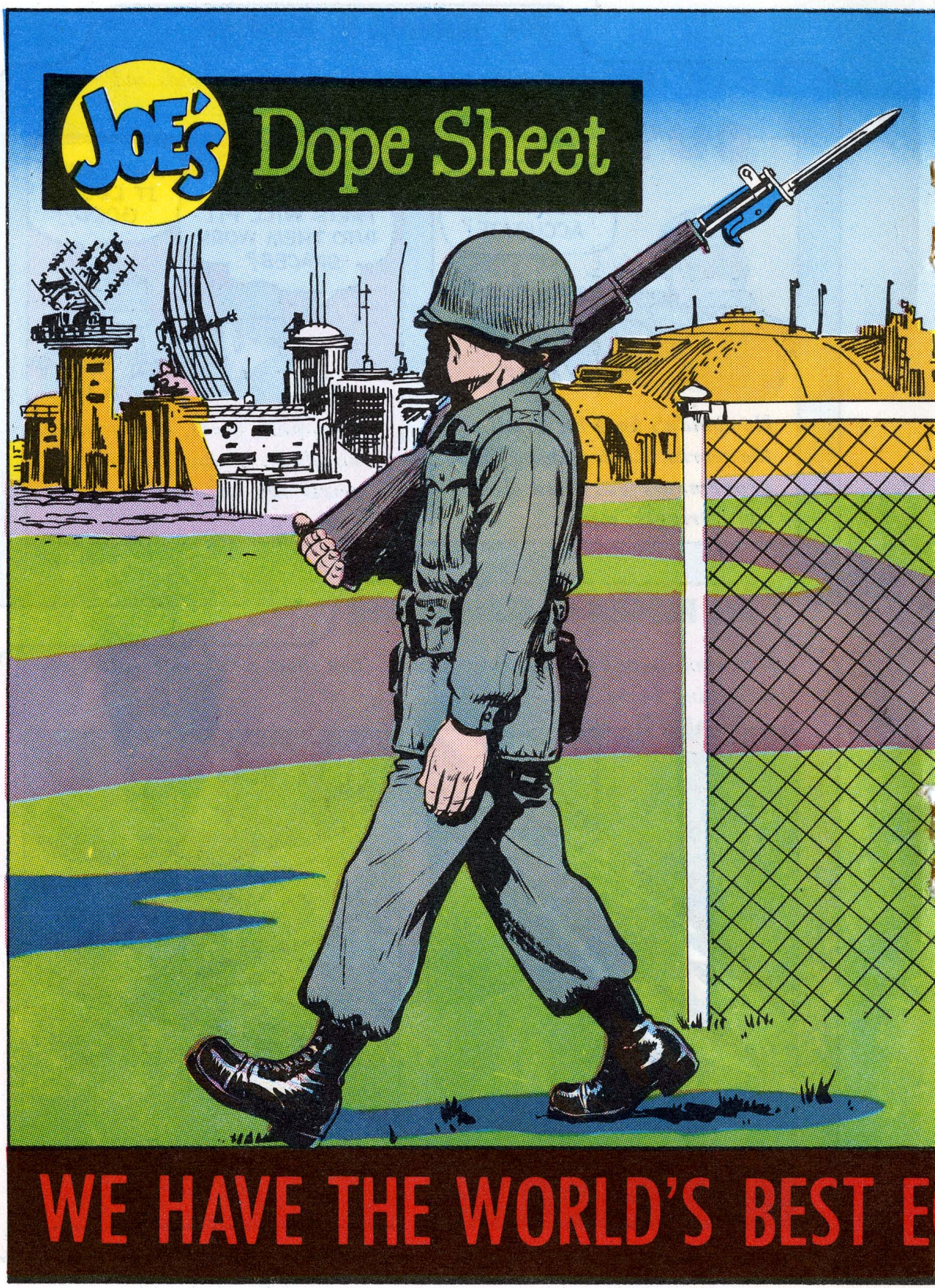
Hot shot ex-hollywood stunt man . . . can shoot a rifle side saddle on a limping horse.



Kept his muzzle plugged . . . causing moisture to collect in the bore, making rust.



Dragged his rifle through mud and dirt, willy-nilly!


JOE'S
Dope Sheet
WE HAVE THE WORLD'S BEST E

JOE'S Dope Sheet
The next time they "send up a flare,"
The gadgetry may not be there,
But the man on the ground
Sure will still be around
With a rifle that needs all his care.
The rifle is your most personal weapon... Here are a few simple rules for its care:
1. Keep it clean.
2. Don't fiddle with or "swap" parts.
3. Protect it against weather or mud.
4. Use it for shooting ONLY!!
WE HAVE THE WORLD'S BEST EQUIPMENT ...Take care of it

The next time they "send up a flare,"
The gadgetry may not be there,
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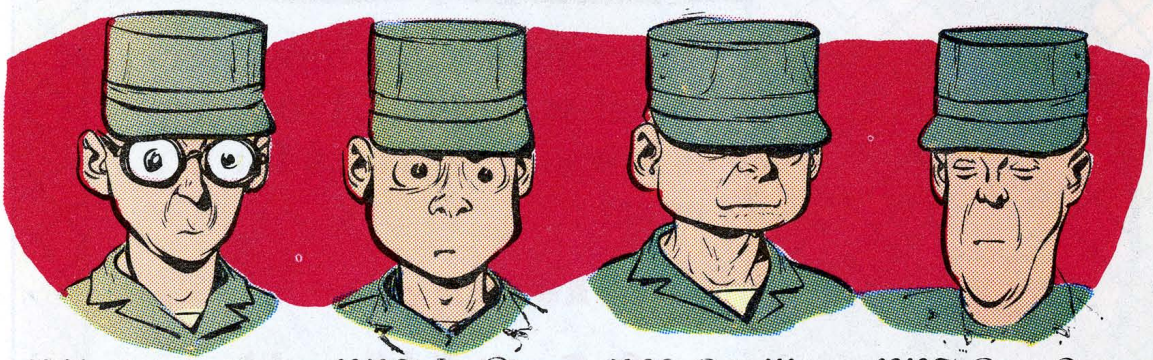
QUIPMENT ...Take care of it



PFC Osborn Digit PVT Joe Digg PFC Otis Meter PVT Onus Square

PFC Osborn Digit

Learned to shoot in the Army. Wouldn't think of trying to take his rifle apart without proper authority or instructions. Even then he will use the FM for guidance.

PVT Joe Digg

Never handled a rifle before he got into the service. Would never try to sand the stock or wooden parts. (He'd let Ordnance do it.) As a driver, he made sure to install a bracket, universal rifle, w/retainer spring assembly, FSN 2590-505-6736 (listed in TB ENG 351, and TB 9-2300-209-20) on his vehicle to hold his weapon.

PFC Otis Meter

A fair shot who cared for his rifle like a baby. Cleaned it after firing so that all primer fouling, powder ashes, carbon, etc., was removed quickly. Made sure he left a thin film of oil.

PVT Onus Square

Would never idly shellac or "soup-up" his rifle just for show. Kept it dry. Cleaned it if he got caught in the rain.

READY ON THE FIRING LINE

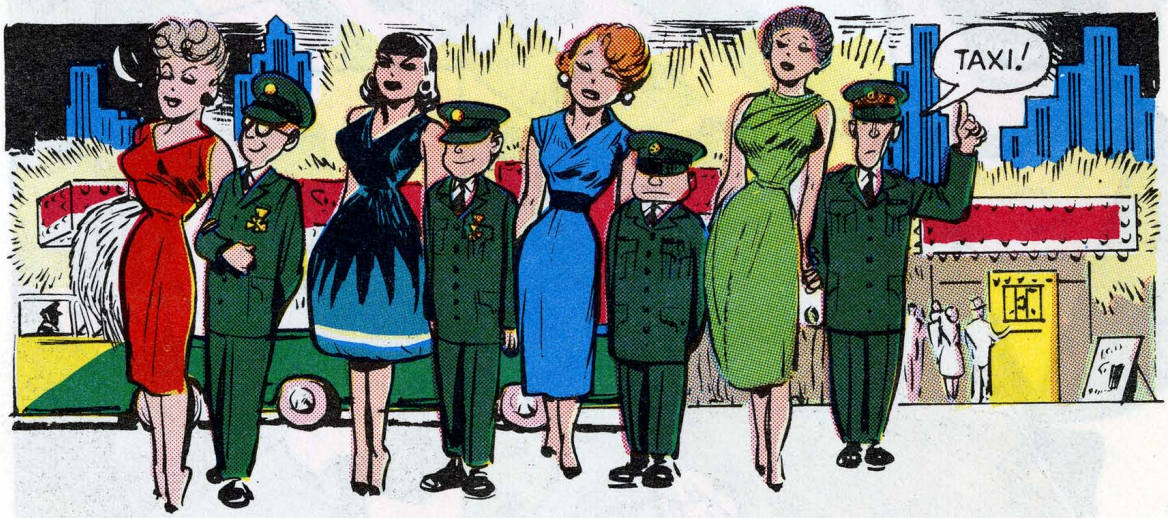
FIRE AT WILL

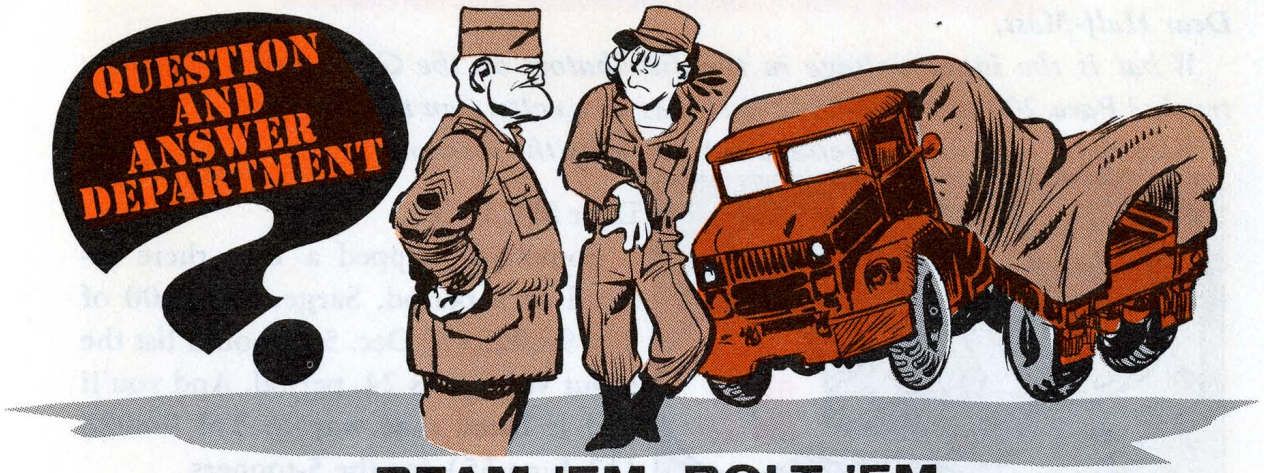
BAM! POINNG! CRACK! BANG! BANG! CRACK!

THE SCORE??

. . . In case you haven't already guessed it was heavily in favor of . . .

Digit Digg Meter Square





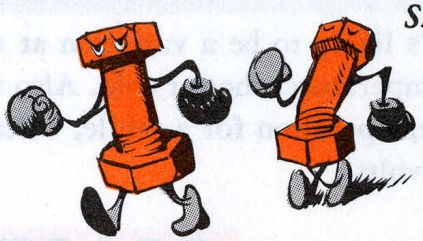
REAM 'EM, BOLT 'EM

Dear Half-Mast,

What's the right way to handle rivets that work loose in the frame crossmembers on G742-series 2½-ton trucks?

We've tried drilling out the rivets and replacing them with bolts. But most of these soon come loose or break.

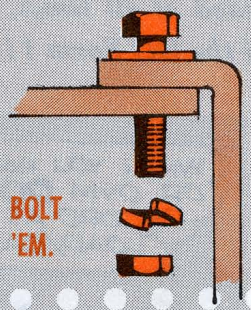
SFC R. M.



Dear SFC R. M.,

Bolts are your best bet to replace those drilled out rivets. And here are a coupla ways you may be able to keep 'em in place.

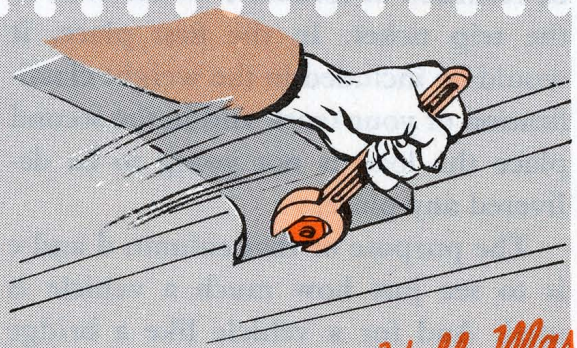
1. REAM 'EM.



Ream out the rivet holes to the right size to get a press fit when you install the bolts. Make sure there're no threads on the part of each bolt that's inside the crossmember. Help 'em stay put by picking bolts with UNF threads. Then use both flat washers and lock washers to install 'em.

2. AND REMEMBER!

Use case-hardened bolts. After installing them, tighten the nuts.



Half-Mast

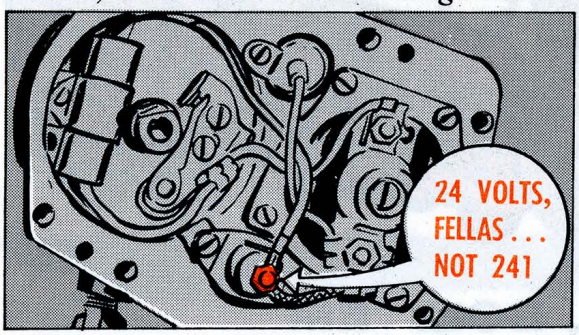
VOLTAGE, OPEN AND SHUT

Dear Half-Mast,

What is the input voltage in the distributors on the G742 and G744-series trucks? Para 200 of TM 9-8022 lists it as 241 volts. Can this be right?

Also, how much is the voltage cut down by the resistor?

SFC R. M.



Dear SFC R. M.,

Somebody slipped a 1 in there instead of a period, Sarge. Para 200 of TM 9-8022 (17 Dec. 54) should list the input voltage as 24, period. And you'll find it listed that way in TM 9-8028 (13 June 55) for the 5-tonners.

Here's a run-down on distributor voltage for both the G742 and G744-series trucks.

Top of coil resistor, points open: 24 volts.	+ Terminal, points closed: 5 to 8 volts.
Top of resistor, points closed: 24 volts.	− Terminal, points open: 24 volts.
+ Terminal, points open: 24 volts.	− Terminal, points closed: 0 to 1 volt.

There's likely to be a variation at the + terminal with points closed in extreme temperatures, hot or cold. Also when the resistor's heating up while starting. After operation for a while, voltage at this check point should stabilize at about 5 volts.

Half-Mast

DO I OR DON'T I?

Dear Half-Mast,

We have bridge trucks that stay loaded at all times. Should I consider this as load cargo and record it on the back of the DD Form 110?

SFC R. J. M.

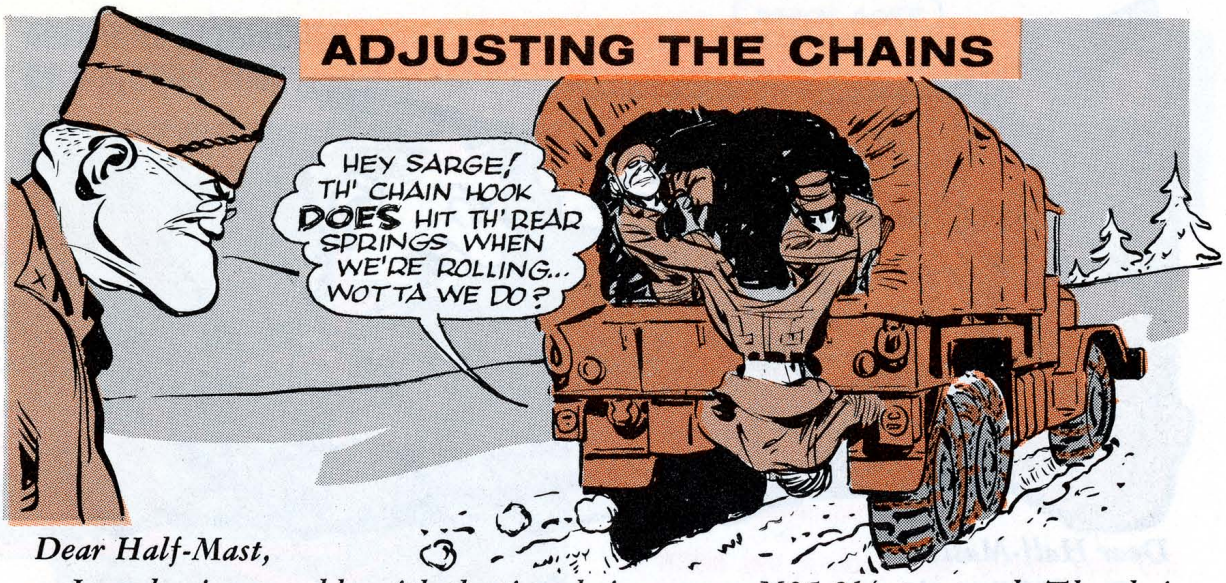
Dear SFC R. J. M.,

If your load on your bridge truck is a part of the OVE or OVM, then I wouldn't consider it as load cargo to be recorded in column e on the back of the trip ticket. In the first place, it would be included in the weight classification of your truck and in the second place the load is not going to be delivered any place.

The purpose of that column d and e is to see just how much a vehicle is used. And for a vehicle like a bridge truck, there isn't much question as to what it's being used for.

Half-Mast

ADJUSTING THE CHAINS



Dear Half-Mast,

I am having trouble with the tire chains on my M35 2½-ton truck. The chain hook on the inside of the chain hits the rear spring when the wheel turns. Do I have the wrong tire chains—mine are FSN 2540-054-0006—or am I putting them on wrong?

CWO E. I. L.

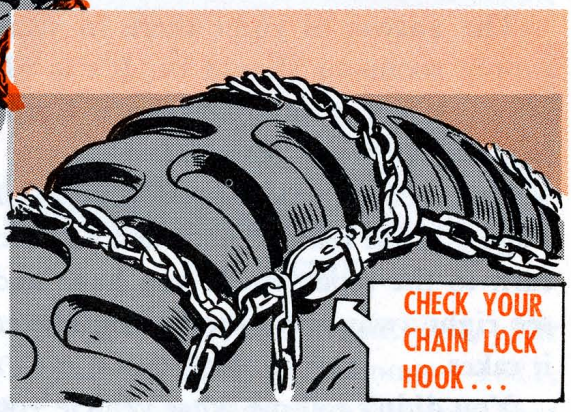
Dear CWO E. I. L.,

You have the right chains. If your truck is not overloaded and if you have enough air in the tires, your trouble must be loose inner side chains.

Might be the chains are loose because you're not getting the lock hook in the right link. If you use highway tires or worn combat tires, this makes it even more likely.

When you put on tire chains, the inside lock-hook should be fastened first. The hook should be put into the link that gives the tightest fit. Then the outside lock-hook should be closed the same way.

If you wind up with two or three free links when the chains are pulled snug and hooked, the extra links should be fastened so they don't whip.



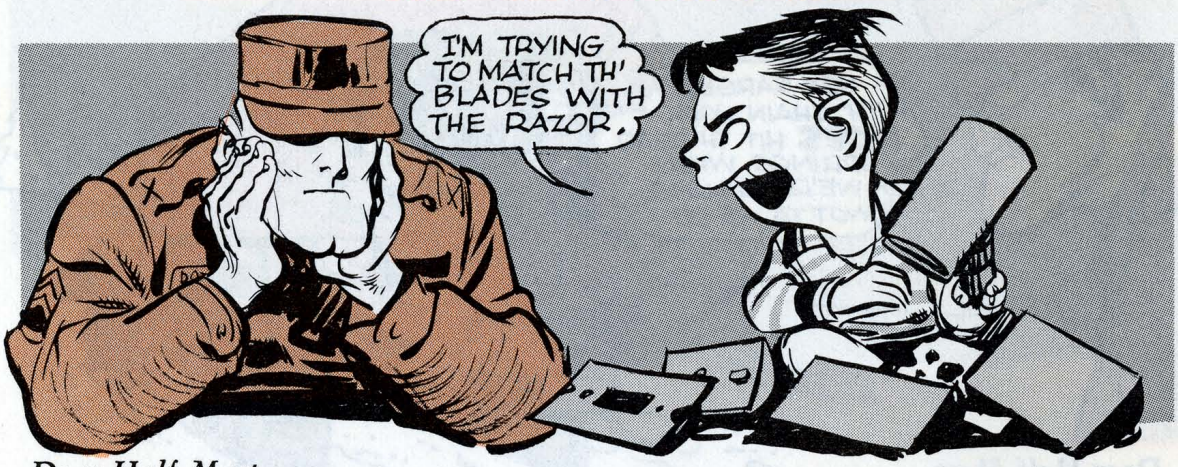
Once you get the chains hooked up right, the chain spreaders will finish the job of keeping the chains so they fit snug.

One other thing you got to watch—put the chains on loose enough so they can shift around as the wheel turns. You got to leave enough play for the chains to slip or they will wear right through the tire.

If you hand-tighten your chains instead of using tools, there won't be any danger you'll get 'em too tight.

Half-Mast

NO BULLDOZER



Dear Half-Mast,

Our TOE authorizes our company tank mounting earth moving bulldozers, but I hear there are several kinds all listed under the same line item number. We'd like to know how to order the kind that will fit our tanks. Can you help us out?

Cpl. J. W.

Dear Cpl. J. W.,

The answer is right there in your supply room—or should be. It's in SB 9-122 (9 May 60) Ordnance Corps Adopted Items of Material.

You get the code from para 8 of Page 1 in the manual and then you can turn to the type vehicle you have and see right away what kind of bulldozer it takes.

You didn't tell me what vehicle you need the bulldozer for so I'll give it to you across the board, like so . . .

SB 9-122 (9 MAY 60) TELLS YOU WHICH BULLDOZER TO USE.

TANK M48 OR M48A1 TAKES BULLDOZER EARTH MOVING TANK MOUNTING M8 W/EQP. THE FSN ON THIS ITEM IS 2590-838-1800.

TRACTOR M8A1 OR M8A2 SHOULD HAVE BULLDOZER EARTH MOVING TRACTOR MOUNTING M5 W/EQP, AND THE FSN IS 2590-709-6850.

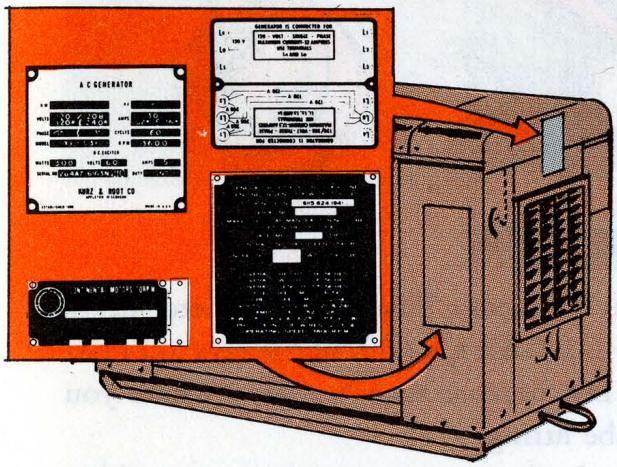
TANK M48A2 NEEDS BULLDOZER EARTH MOVING TANK MOUNTING M8A1 W/EQP, AND THE FSN IS 2590-649-5937.

TANK M60 WILL TAKE BULLDOZER EARTH MOVING TANK MOUNTING M9 W/EQP, FSN 2590-708-3563 . . . WHEN IT BECOMES AVAILABLE.

Half-Mast

GUARANTEE SATISFACTION
BY WATCHING YOUR . . .

EQUIPMENT WARRANTY DATES



Your generator, grader, crane-shovel or other Engineer equipment giving you trouble?

About ready to send through a UER?

How about giving the ID plates a quick look-see — could be your equipment's covered by a manufacturer's warranty.

Like when you put out your hard-earned cash for a new jalopy and the clutch goes bad before you clock a coupla thousand miles — you go back with a club in your hand to the guy that sold it to you.

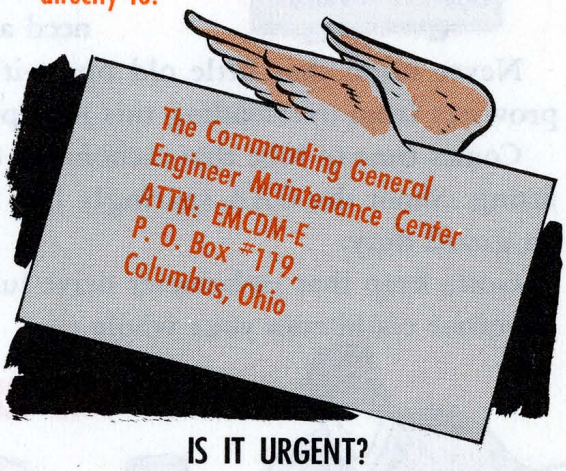
The manufacturer's warranty serves the same purpose for the Army.

Most of the Engineer equipment delivered to the Army comes with a one-year warranty from date of delivery. If you don't know the delivery date, you go by the date of manufacture stamped on the equipment's ID plates. The actual date of delivery will be checked out by the Engineer Maintenance Center when they receive the info on the DA Form 468.

HERE'S WHAT YOU DO

When you run across a deficiency within the warranty period . . .

1. Notify your direct support unit.
2. Then pass the word along to your Engineer Maintenance Technician or your Engineer Regional Maintenance Office.
3. Within two working days, airmail your UER directly to:



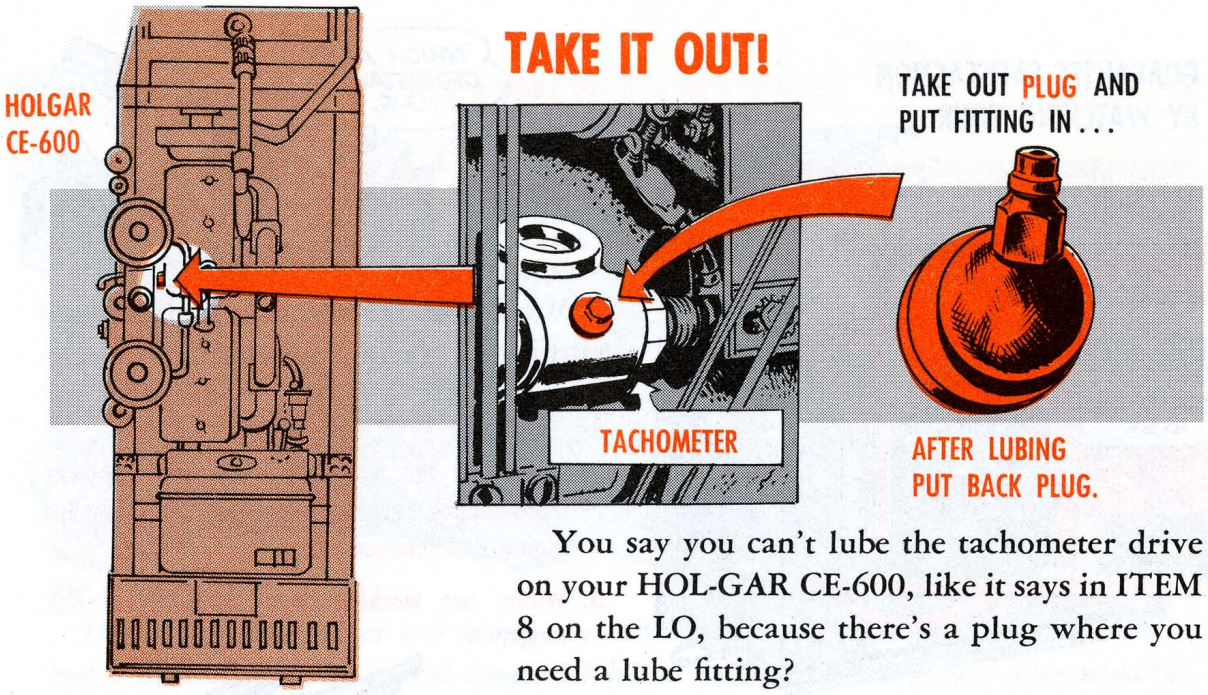
IS IT URGENT?

Now, if it's a real urgent deal, your CO can call EMC at BElmont 1-1811, Ext. 2117 and give them the dope that you're going to put on the UER. The UER should follow by airmail—pronto!

This warranty date is pretty important and can save a wallet full of cash. Keep your UER's outta the "hold" basket. Sometimes a report that's been stuck in a basket arrives at EMC too late to stop further issues of the same equipment . . . or to allow time to warn other users of the trouble.

Most important, if it arrives too late and the warranty period's up — the Army's lost some hard cold cash.

TAKE IT OUT!



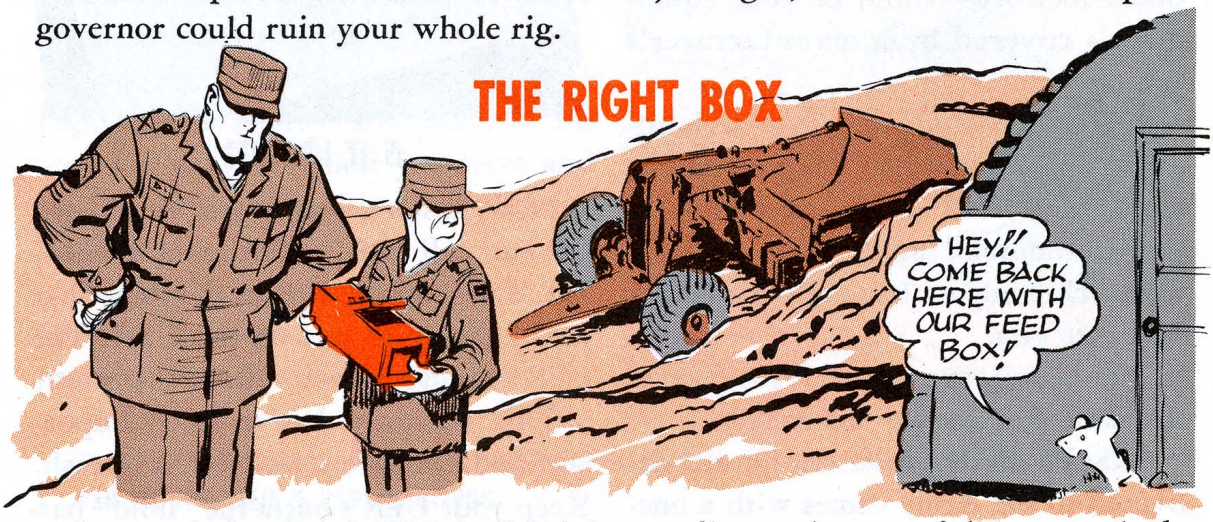
You say you can't lube the tachometer drive on your HOL-GAR CE-600, like it says in ITEM 8 on the LO, because there's a plug where you need a lube fitting?

Never mind that little old plug—it's only there to stop grease gun-packing prowlers from overloading this lube point.

Comes time to lube that tachometer drive, just pull the plug and put in a lube fitting. Shoot the GAA sparingly like it says in the LO—then put the plug back on guard duty.

Gotta keep that tachometer drive lubed just right, or failure of the overspeed governor could ruin your whole rig.

THE RIGHT BOX

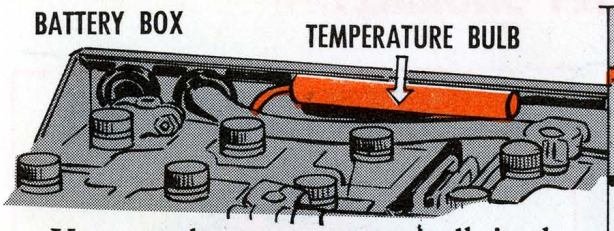


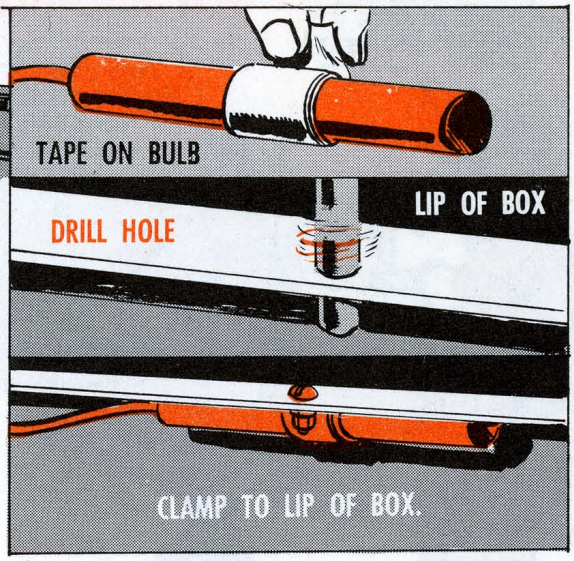
Some of the Curtis-Wright Model CWT-18M scrapers have tool boxes located on the left side of the yoke horn. If you've got one of them, you can save yourself time and trouble by keeping your tools in the right hand cross box compartment.

You get your left and right sides by standing at the rear of the scraper looking toward the front end.

If your scraper was purchased on PO-88-A-45072-11 or PO-88-A-46014-11, you can look for a universal lube swivel with adapter to come with your rig. Toss this in the box compartment along with your other tools.

TEMPERATURE BULB—NO SWEAT



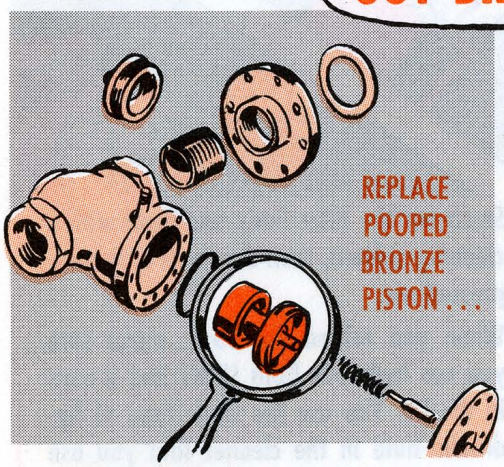


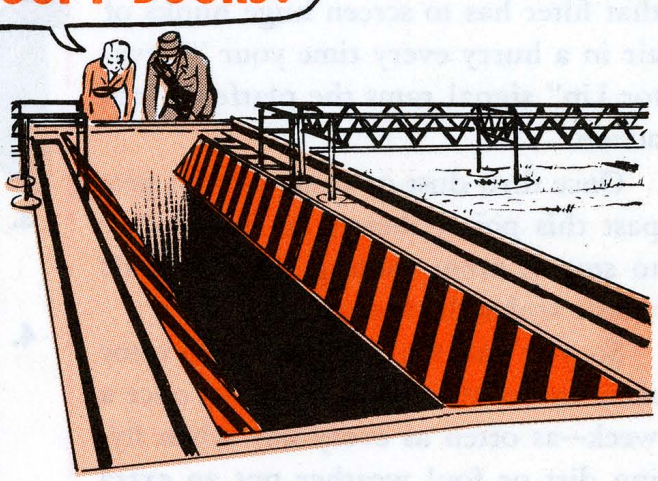
You say the temperature bulb in the battery box of your winterized Stewart and Stevenson generator sets are in your way? You say you have to move them every time you service the batteries? You say the constant moving and flexing of the capillary tubes causes 'em to break? Is that what's bothering you, Joe.

Tell you what you oughta do.

Wrap a turn of 1-in electrician's tape around the center of the temperature bulb. Rig yourself a clamp to go around the tube (where you wrapped it) and slip the tube under the turned-over edge of the battery box. Drill a hole or two through the lip of the box and screw the clamp to the box so your bulb will be under the lip and out of the way.

GOT DROOPY DOORS?





If your Nike elevator doors won't operate—or operate like a pair of zombies—ask your support people to check out the SA 1 bypass valve.

Could be the original bronze piston in that SA 1 valve has pooped out, and needs replacing. There's a new steel piston available through normal supply channels under FSN 1450-779-0595.

This new steel piston fits the SA 1 valve on all Wayne AAA power units except the NE 5007 model.

It can also replace the original bronze piston in an ASCO SA 2 bypass valve or S6 elevator shutoff valve when necessary.

GOT A SNUFFLY SNORKEL?

Snuffles in the snorkel are bad news at Nike sites.

That's no riddle, if you happen to know what the air filter does for an elevator's hydraulic system.

Maybe it looks like a tin can on a stick—but hot or cold, rain or shine, that filter has to screen huge hunks of air in a hurry every time your "Elevator Up" signal rams the platform into action.

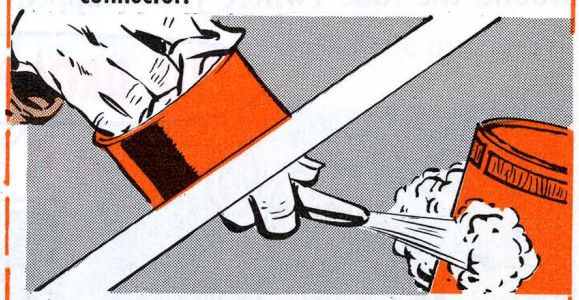
Once dirt, dust or condensation gets past this point, there's no other place to stop it from fouling the elevator's whole hydraulic system.

So you can see why savvy elevator men service the air filter at least once a week—as often as every day when flying dirt or foul weather put an extra strain on the snorkel.

It takes only a few minutes to—

1. Unscrew the wingbolt and take off the filter.

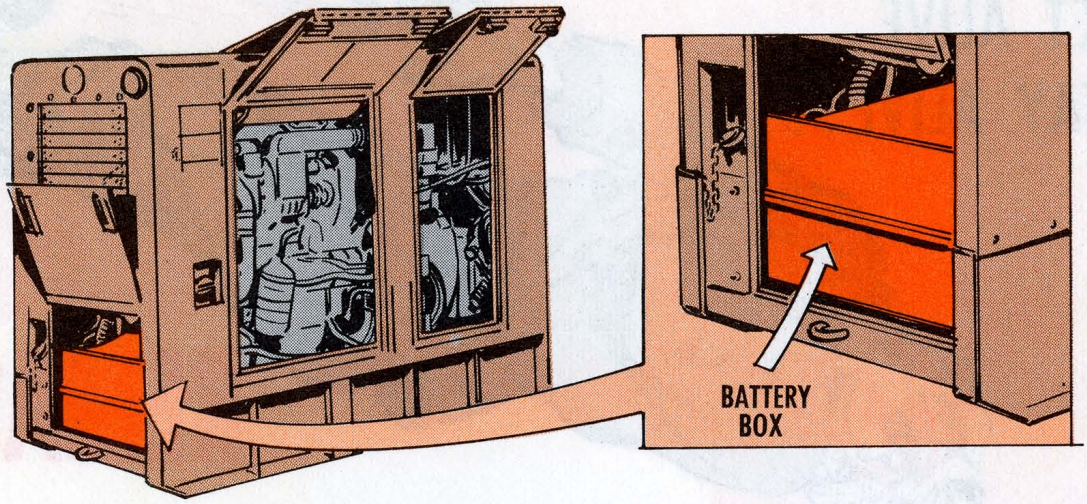
2. Tie a clean, lintfree cloth over the open connector.



3. Swab out the filter body and bowl with a cleaning solvent, then dry them with compressed air.
4. When you reload the bowl, make sure you use hydraulic fluid (OHC) like it says in the LO. You use the same type of hydraulic fluid in the cleaner that you use in the hydraulic system. That way you don't get fouled up hydraulic fluid in case of a "Blowdown" from the air filter.

You do **not** use motor oil in those cleaners as some of the labels on the cleaners say. If your air filter decal calls for engine oil (OE), grab a paint brush and black out that instruction.

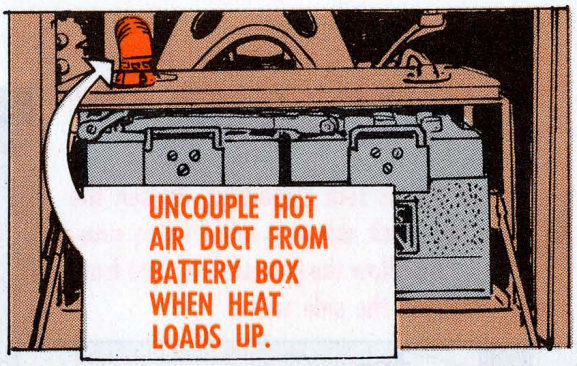
HOT CAPS



Got a Kurz & Root 45 KW Model Alex 1 generator with a heater for sub-zero starting?

Then you want to keep an eye peeled for cap-cooking heat in the battery box **whenever** you're warming it up for a cold start— especially when the mercury reads above —25°F.

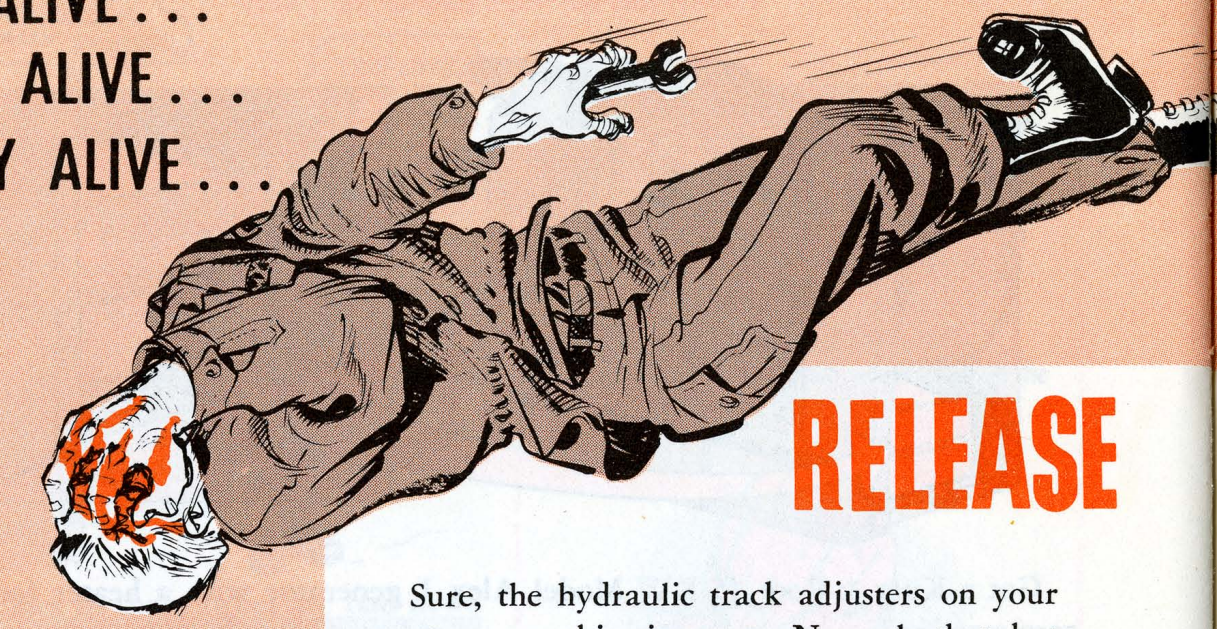
The air can be colder than a penguin's proboscis only a few feet from the generator, while the heat is curling the caps on your batteries inside the box.



So when you're warming up the generator (especially in temperatures above —25°F), you just uncouple the hot air duct from the battery box as soon as heat begins to load up in there.

Naturally you recouple the battery box heat duct when you shut down the generator, so you're all set for the next run.

BE ALIVE...
ACT ALIVE...
STAY ALIVE...



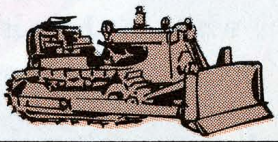
RELEASE

Sure, the hydraulic track adjusters on your tractors are a big timesaver. Not only that, but they save a lot of back-breaking muscle work with a clumsy wrench.

You know when you tighten the tracks on your TD-18, TD-20, TD-24 or D8 (9A-Series)

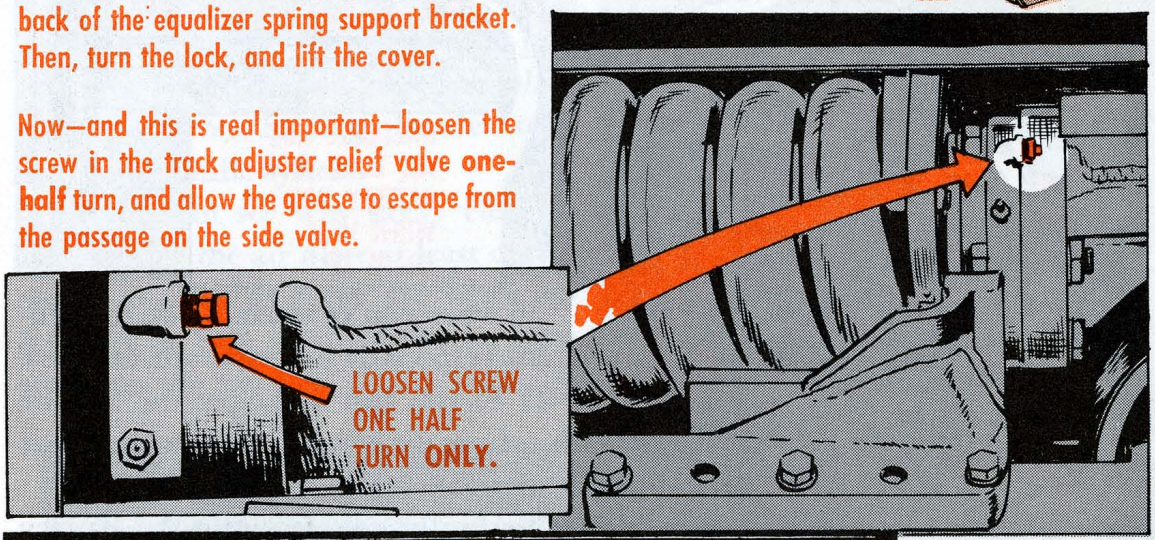
DON'T TAKE OFF THE GREASE FITTINGS, BLEEDER OR RELIEF VALVE (OR THE

CATERPILLAR D8 (9A SERIES)



You loosen the bolt on the inspection cover in back of the equalizer spring support bracket. Then, turn the lock, and lift the cover.

Now—and this is real important—loosen the screw in the track adjuster relief valve **one-half** turn, and allow the grease to escape from the passage on the side valve.



Remember— DON'T LOOSEN THE SCREW MORE THAN ONE-HALF TURN.

If you fully released the screw, the pressure could shoot the screw out of the valve like a missile and put you on the casualty list.

BE ALIVE...
ACT ALIVE...
STAY ALIVE...

RELEASE YOUR TENSIONS

Sure, the hydraulic track adjusters on your tractors are a big timesaver. Not only that, but they save a lot of back-breaking muscle work with a clumsy wrench.

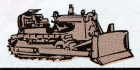
You know when you tighten the tracks on your TD-18, TD-20, TD-24 or D8 (9A-Series) Cats, you force grease into the adjuster through a grease fitting until the track is properly adjusted. This gives you a supply of grease under high hydraulic pressure in the track adjusting system.

And, to loosen the tracks (on all except the TD-24) all you have to do is release the hydraulic pressure.

But, before you start to do that, play it safe and paste this in your noggin:

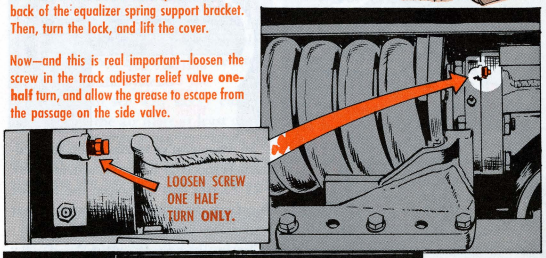
DON'T TAKE OFF THE GREASE FITTINGS, BLEEDER OR RELIEF VALVE (OR THE PISTON CLAMP ON THE TD-24) WITHOUT FIRST RELEASING THE PRESSURE.

CATERPILLAR D8 (9A SERIES)



You loosen the bolt on the inspection cover in back of the equalizer spring support bracket. Then, turn the lock, and lift the cover.

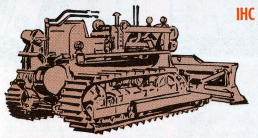
Now—and this is real important—loosen the screw in the track adjuster relief valve **one-half** turn, and allow the grease to escape from the passage on the side valve.



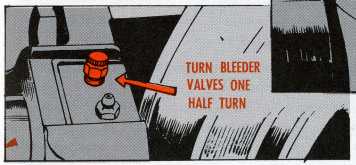
Remember— DON'T LOOSEN THE SCREW MORE THAN ONE-HALF TURN.

If you fully released the screw, the pressure could shoot the screw out of the valve like a missile and put you on the casualty list.

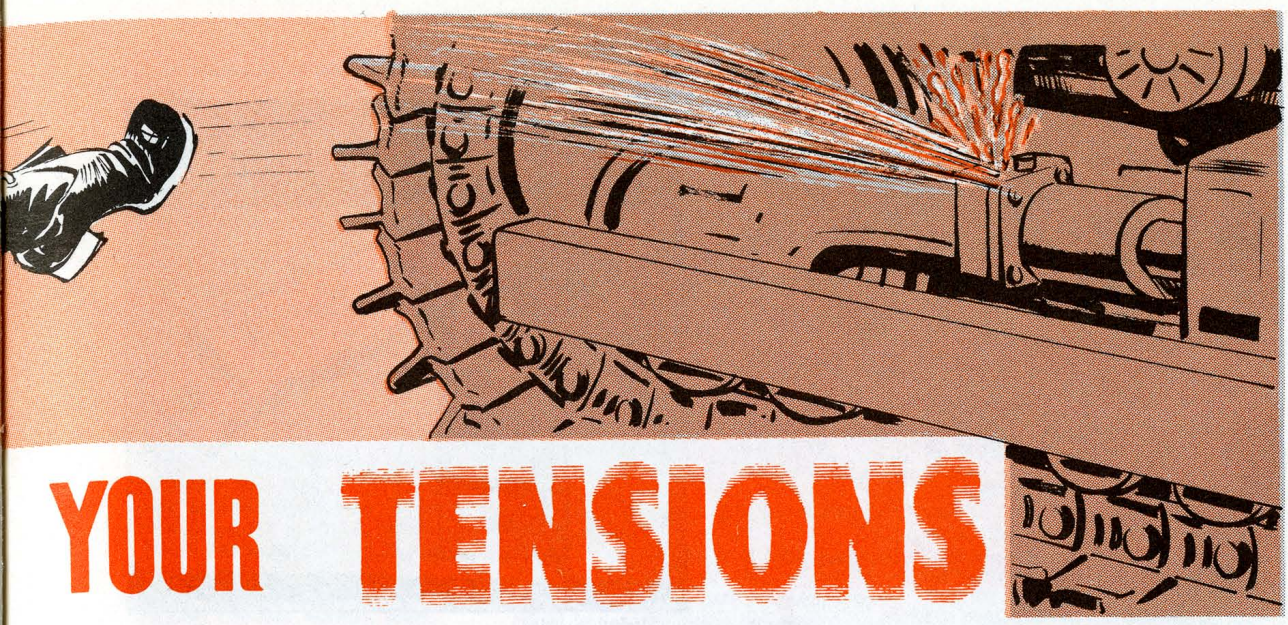
IHC TD-18



First, you remove the cap screw and the lockwasher from the cover plate. Then, you remove the cover plate.



Now, you turn the bleeder (or relief valve) counter-clockwise one-half turn to let the grease escape from the cylinder.



YOUR TENSIONS

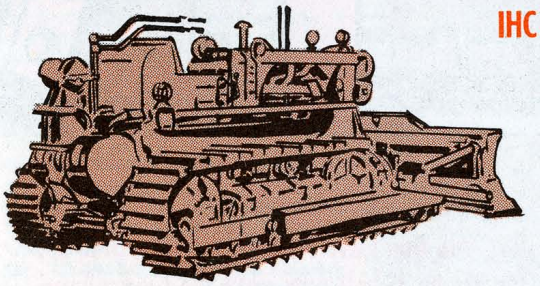
Cats, you force grease into the adjuster through a grease fitting until the track is properly adjusted. This gives you a supply of grease under high hydraulic pressure in the track adjusting system.

And, to loosen the tracks (on all except the TD-24) all you have to do is release the hydraulic pressure.

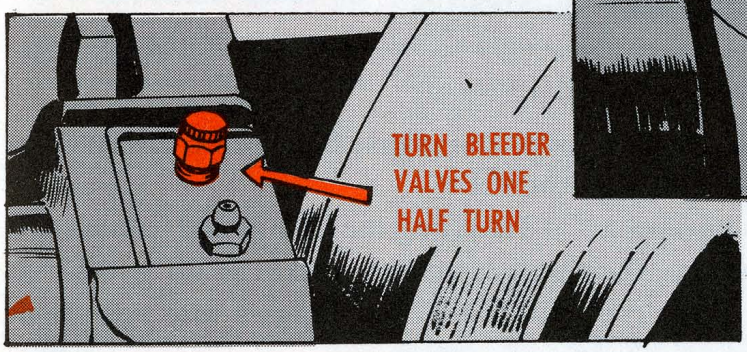
But, before you start to do that, play it safe and paste this in your noggin:

PISTON CLAMP ON THE TD-24) WITHOUT FIRST RELEASING THE PRESSURE.

IHC TD-18

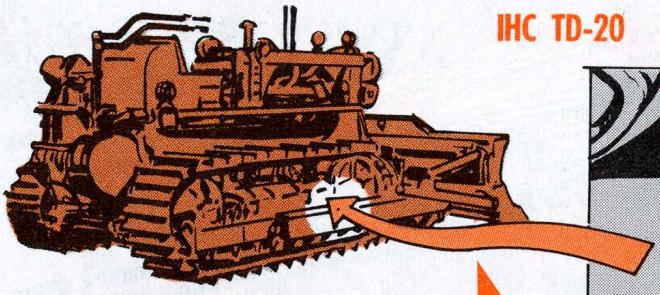


First, you remove the cap screw and the lockwasher from the cover plate. Then, you remove the cover plate.

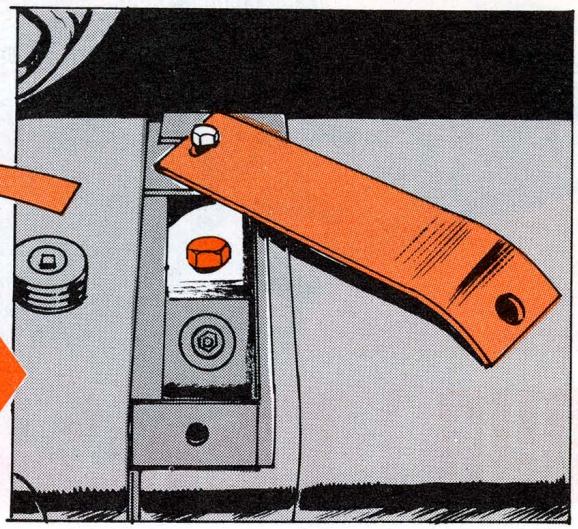


Now, you turn the bleeder (or relief valve) counter-clockwise one-half turn to let the grease escape from the cylinder.

IHC TD-20

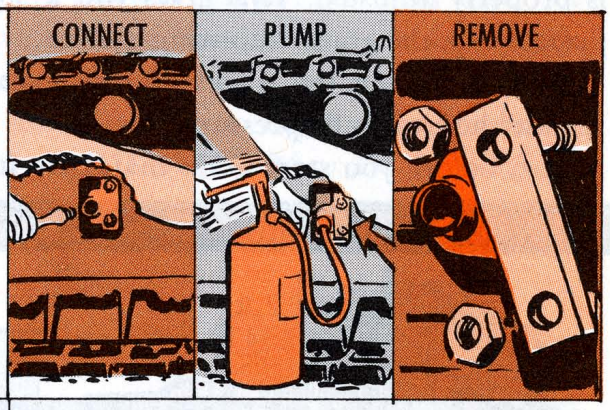


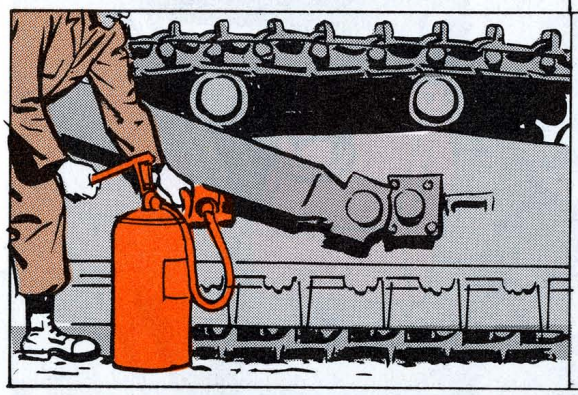
First you remove the cover plate on the track spring housing. To release the pressure, you just loosen the capscrew one-half to one turn—no more than that.



IHC TD-24

With the TD-24, the operation is a bit different. Remove the pipe plug and connect the bucket lubricator nozzle into the tapped hole. Slowly pump the lubricator until the piston clamp is free. Then take off the piston clamp U-bolt nuts, U-bolt and clamp.





But, you don't ever remove the adjusting piston clamp U-bolt nuts until the bucket lubricator nozzle has been inserted into the pipe plug to release the pressure.

EXTRA CARE

When you're releasing the pressure by turning the bleeder or relief valve, you can play it extra safe by putting a heavy cloth or piece of canvas over the valve. This will help to stop either the screw or grease from being blown from the valve.

Handling the fittings and valves with proper respect makes it no gamble at all. It's a sure thing—a safe operation.

A selected list of recent publications of interest to Organizational Maintenance Personnel.

TECHNICAL MANUALS

TM 1-1HA2-4-3-4 Jul Illus Pts Brkdwn: H-21 Cen Trans & Clutch Assy.
TM 1-1L-20A-4-20P Aug.
TM 1-1L-20A-1007 Sep Wing Tie-Down Rings.
TM 1-215 C1 Sep Instmt Flng.
TM 1-2R-0470-2 Aug Oper and Serv Instruct Engine O-470-11.
TM 1-6R5-3-10-14 Apr Fuel & Water pumps.
TM 1-4B1-1-1 Jul Cleaning, Insp, Rep and Surf Treatments: Aircraft Brakes.
TM 3-4240-212-15 Sep Breathing Apparatus Oxygen Generating M20.
TM 5-2410-210-15 Aug Tractor, Int Harvester Mod TD-6.
TM 5-3695-200-15 Aug Saw, Chain, Gas Driven: 18 in Mod Strunk G-3.
TM 5-3810-200-20P Aug Crane-Shovel, Marion Mod 372.
TM 5-3810-203-10-20 Aug Crane-Shovel, Garwood M20A(F), M20B.
TM 5-3895-231-20P Aug Gradation Control Unit, Barber-Greene Mod 866.
TM 5-3895-234-20P Aug Roller, Gasoline Buffalo-Springfield Mod KT-16B.
TM 5-3910-201-12P Aug Conveyor Belt, 300 Tons, Barber-Greene Style N.
TM 5-4320-210-12 Aug Pump, Cent; Consolidated Diesel Mod 4093.
TM 5-6115-231-15 Aug Gen Set 0.5 KW AC, 120V Winpower Mod G-0536-1A08-1.
TM 5-6115-234-20 Aug Generator Set Diesel Engine 15KW, AC Winpower Mod D-15H18M.
TM 5-6115-238-20 Aug Generator Set Diesel Eng 60KW, AC International Vermont Mod M60 DNT-SH3.
TM 5-6230-201-25P Aug Searchlight: 18 In, 2,500KW, Crouse-Hinds Model 44676-C.
TM 9-1005-224-12 Jun -20P Aug 7.62 mm, M60 Machine Gun.
TM 9-1430-504-20P Sep (Hawk).
TM 9-2320-205-20P Aug Carrier, Cargo, Amphibious: M76.
TM 10-500-45 Sep Air Rigging M211 2½ Ton Cargo Truck.
TM 10-1605D, C3 Sep Service Caster.
TM 10-3930-213-20P, C1 Sep Clark Plane-Loader.
TM 10-4930-203-26P Sep Loading Stand, Liquid Transfer, Build (FSN 3990-752-9064).
TM 11-809-10, C2 Sep Radio Transmitter T-368/URT.
TM 11-1167-20, C1 Aug Radio Set AN/TPS-ID.
TM 11-5525, C1 Aug Amplifier AM-243A/U.
TM 11-5805-240-20P Repeater, Telephone AN/TCC-11.
TM 11-5815-222-20P Jul Teletypewriter Set, AN/FGC-38, -38A, -38X.
TM 11-5815-263-20P Teletypewriter Sets AN/FGC-56 and AN/FGC-58.
TM 11-5815-264-20P Teletypewriters TT-243/FG and TT-247/FG.
TM 11-5820-224-12P, C1 Oct Radio Set AN/VRC-6.
TM 11-5820-355-20P, C1 Sep Radio Set AN/PRC-6.
TM 11-5821-202-12 Jun Radio Set AN/ARC-59(V).
TM 11-5825-219-12P Jul Beacon, Radio AN/FRN-23.
TM 11-5840-208-20 Jun Radar Set AN/MPQ-4A.
TM 11-5841-217-12 Jul Navigation Set, Radar AN/APN-129(V).
TM 11-5895-212-20P Jul Radar Set AN/APR-9B.
TM 11-5895-273-20P Amplifier AM-186Z/FR.
TM 11-5985-225-12P Jul Electronic Equipment MK-462-/G.
TM 11-6115-211-12 Generator Set, Gasoline Engine PU-465/G.
TM 11-6125-210-20P Aug Motor Gen PU-126/U and PU-126A/U.
TM 11-6140-203-12 Nickel-Cadmium Storage Batteries.
TM 11-6625-320-12 Jun Voltmeter, Meter ME-30A/U and Voltmeters, Electronic ME-30B/U and ME-30C/U.
TM 11-6625-335-12 Jun Indicator, Standing Wave Ratio AN/UPM-108.
TM 11-6625-353-12 Jul Amplifier Radio Frequency AM-1881/U.
TM 11-6625-355-12 Aug Audio Oscillator TS-421A/U.
TM 11-6660-203-20P Jul Wind Measuring Set AN/MMQ-1A, -1B.
TM 11-6660-211-20P Jul Meteorological Station AN/PMQ-4 and -4A.
TM 11-6665-200-12, C3 Aug Radiacmeter IM-108/PD.

LUBRICATION ORDERS

LO 5-1055-1 Jul Subgrader, Buckeye Gar Wood Mod FG 24.
LO 5-1055-2 Jul Subgrader, Buckeye Gar Wood Model FG 24.
LO 5-1100-2 Jul Roller, Road Galion Mod Chief with Herc Mod WXC3 or WXLC 3 Eng.
LO 5-1147 Jul Kettle, Asphalt Rosco Mod KO.
LO 5-1172-4 Jul Crane-Shovel, ¾ Cu Yd Koehring Mod 304.
LO 5-1185-2 Jul Roller, Road Galion Mod T5G with Eng Cont Mod F-244.
LO 5-2815-200-15 Aug Engine Diesel: Det Diesel Eng Div Gen Mtrs Corp. Series 71.
LO 5-3040-1 Aug Tractor, Crawler Caterpillar Model D-8.
LO 5-3040-3 Aug Tractor, Cat Mod D-8.
LO 5-3300 Aug Tractor Whl, LeTourneau Model Super C Touradozer.
LO 5-3805-205-15 Aug Scraper Towed Curtis-Wright MOD CWT 18-M.
LO 5-3805-207-15-2 Jul Loader Clark Mod 85A-M.
LO 5-3825-208-12 Aug Sweeper, Rotart Tower, Spenced Mod MS-1.
LO 5-3895-232-12 Aug Kettle, Heating, Bituminous, Littleford Bros. Model 750 US.
LO 5-4320-213-12 Aug Pump, Cent. GHS Dr. Allis-Chalmers Mod 501-112-520.
LO 5-5038 Jul Gen Set, 300 KW Cat D-397.
LO 5-5041 Aug Compressor, Le Roi Mod 600D2.
LO 5-5167 Aug Engine gasoline, Hercules JXC, JXD.
LO 5-5172 Aug Eng. Diesel GM Mod 6-71.
LO 5-5176 Jul Engine, Diesel, Cat Mod D17000.
LO 5-5188 Aug Engine, Gas, Power Unit, Minn Moline Mod 165-4A, 206A-4A.
LO 5-5189 Jul Eng. Diesel, Int'l Harv Mod V-1.
LO 5-5222 Aug Engine, Gas, Buda Models.
LO 5-5223 Aug Eng. Gas Buda Mod Hp 217, 234, 298, 326, 351, K-428, L 525, La 525.
LO 5-5237 Jul Engine, Diesel, Cat D-397.
LO 5-5329 Jul Gen Set Cummins Mod JSGA-601-45 KW 60/50 Cycle-SF-45D.
LO 5-5334 Aug Generator Elec Con-Diesel Mod 1877.
LO 5-5445 Aug Engines, Diesel, Cummins Models.
LO 5-9107-1 Aug Oxy and Nit Air Products Mod A-2.
LO 5-9107-2 Aug Generator, Oxygen Liquid, 70 Bls, Gaseous, 1000 Cu Ft Aig Products Model A-2.
LO 5-9125-1, -2 Aug Shop Equip Gen Pur Repair, Set No. 2, Light.
LO 5-9143 Aug Auger, Earth, Skid-MTD, BUDA Mod Y-1.
LO 5-9257 Jul Truck, garbage, 15 & 20 cu yd.
LO 5-9258 Jul Truck, garbage, 14 cu yd.
LO 5-9441 Jul Trailer, 2½ ton, bridge eqpt.
LO 5-9497-1 Jul Carrier, Crane, Available Truck Model HC-70X.
LO 5-9497-2 Jul Carrier, Crane, Available Truck Model HC-70X.
LO 5-9512-1,-2 Jul Crane-Shovel, Marion Mod 372.
LO 5-9517-1 Aug Crane-Shovel, Garwood Buckeye Mod M-20-A.
LO 5-9517-2,-3 Aug Crane-Shovel, Garwood Buckeye Model M-20-A.
LO 5-9523-2 Aug Crane-Shovel, 20 Ton, ¾ Cu Yd, Koehring Model 304.
LO 5-9523-4 Aug Crane-Shovel, 20 Ton, ¾ Cu Yd, Koehring Model 304.
LO 5-9525-1 Jul Crane-Shovel, 20 Ton, ¾ Cu Yd, Unit Model 1220-CE.
LO 5-9525-2 Jul Crane-Shovel, 20 Ton, ¾ Cu Yd, Unit Model 1220-CE.
LO 5-9528-1 Aug Crane-Shovel, Hyster Model HW Hystaway.
LO 5-9528-2 Aug Crane-Shovel Hyster Model HW Hystaway.
LO 5-9528-3 Aug Crane-Shovel, Hyster Model HQ Hystaway.
LO 5-9530-1 Aug Crane-Shovel, 2 Ton, ⅜ Cu Yd Shield-Bantam Model ABM-53.
LO 5-9530-2 Jul Crane-Shovel, 2 Ton ⅜ Cu Hd Tr Mtd, Shield-Bantam Model ABM-53.

MWO'S

MWO 5-2410-203-35/1 Sep IHC TD-18-182.
MWO 5-4210-201-35/1 Sep Trailer, Firefighting, Pumper Sabre Model TT-2000.
MWO 5-4310-207-35/1 Sep Com Rotary Truck Mounted, 210 CFM, Harris Model J-210-FED.

SUPPLY MANUALS

SM 5-4-5180-S05 Aug Tool Kit, Carpenter's: Engineer Platoon.
SM 9-4-5180-A14 Jul Ground Handling Equipment Corporal II.
SM 11-4-4940-N01 Jul Pressurizing Kit HD-51/GT.
SM 11-4-5180-R02 Jul Sig C Lineman's Equipment TE-21.
SM 11-4-5180-S14 Jul Tool Equipment TK-3/MSM-2.
SM 11-4-5180-S15 Jul Tool Equipment TK-40/FSM-3.
SM 11-4-5180-S16 Jul Tool Equipment TE-112.
SM 11-4-5180-S17 Jul Tool Set TE-16.
SM 11-4-5975-C01 Jul Tool Set TE-56.

TECHNICAL MANUALS

TB ENG 240 Aug Inspection of 2,000 to 6,000 psi compressors.
TB ENG 350 Sep Conversion of Lighting Sys on Eng Trailed Vehicles.
TB ENG 357 Sep.

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AN/TRC-24

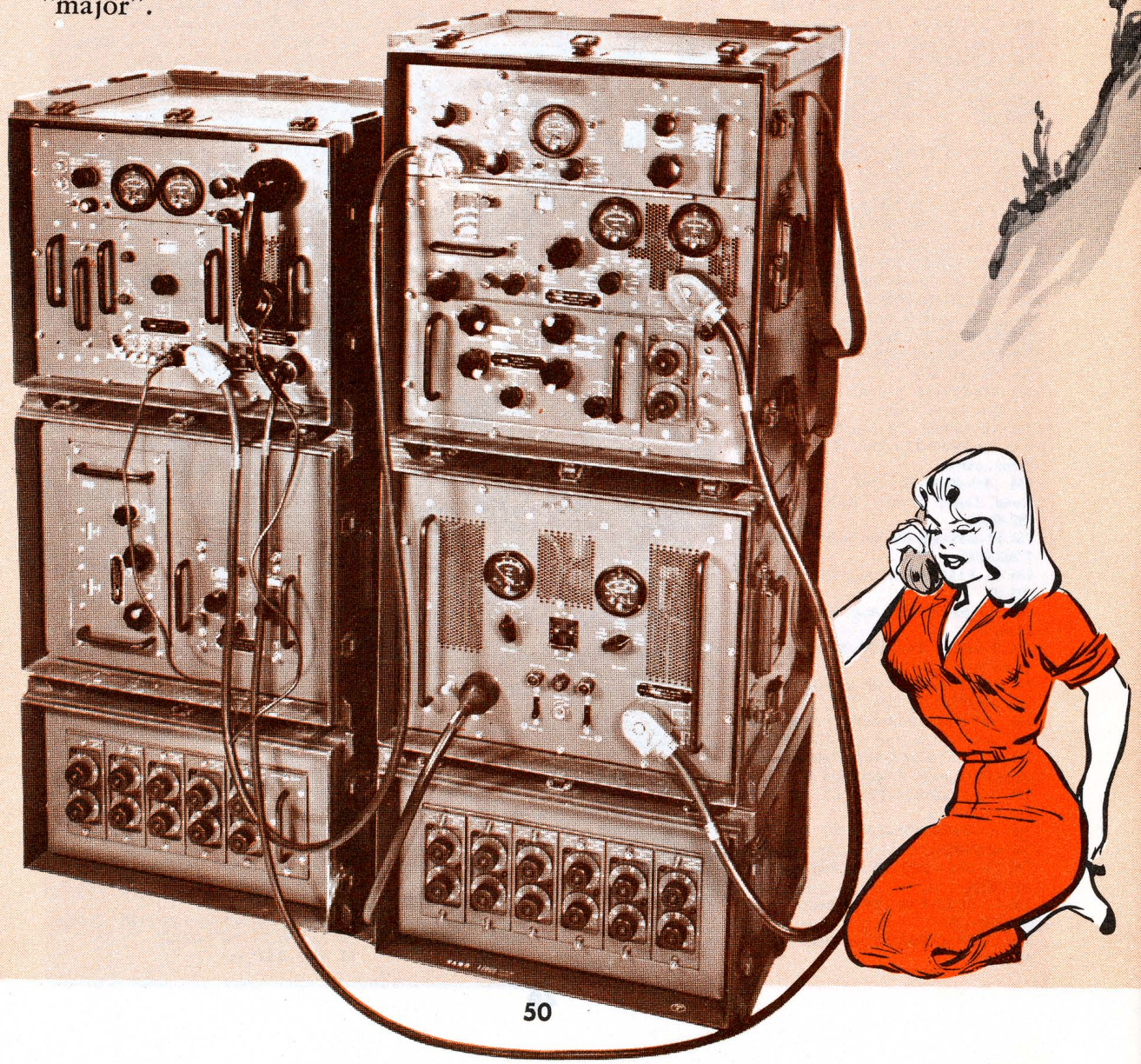
Get the word. Handle the word. Pass the word.

That's the word on the old reliable "Track 24".

Always on the job and usually way out in the field where it'll do the most good—your TRC-24 helps form the backbone of the modern Army's communication network.

And because she has to be on the line night and day, that terminal set needs preventive maintenance service with a capital PM. These be-your-own-inspector checks should go a long way toward keeping your "24" on the track.

Check 'er out for both major deficiencies (in **Bold Type**) and minor ones. A major deficiency is one that'll take your set off the line or make it too dangerous to handle. A minor one might just grow worse, 'til it changes its name to "major".



LET'S COMMUNICATE

BE YOUR OWN INSPECTOR ON THE...

AN/TRC-24

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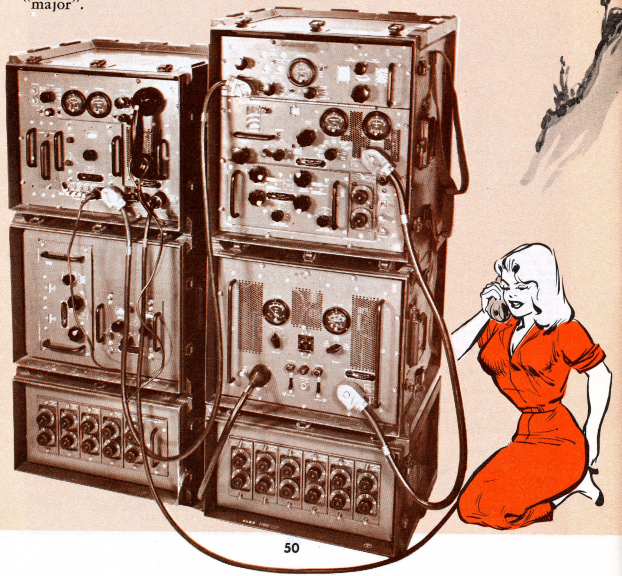


RADIO TRANSMITTER T-302/TRC

DUST COVER ON ADJUSTING SCREWS—Open; missing.

FILTER (in transit case)—Dirty; clogged; **missing.**

NESTING CLEATS—Rough; dirty; cracked.

TRANSIT CASE—Bent; paint chipped; rusty.

SNAP CATCHES—Loose; **missing.**

DIALS—Glass cracked or broken; indicating needles bent.

PANEL FASTENERS—Not flush with panel; **fail to lock.**

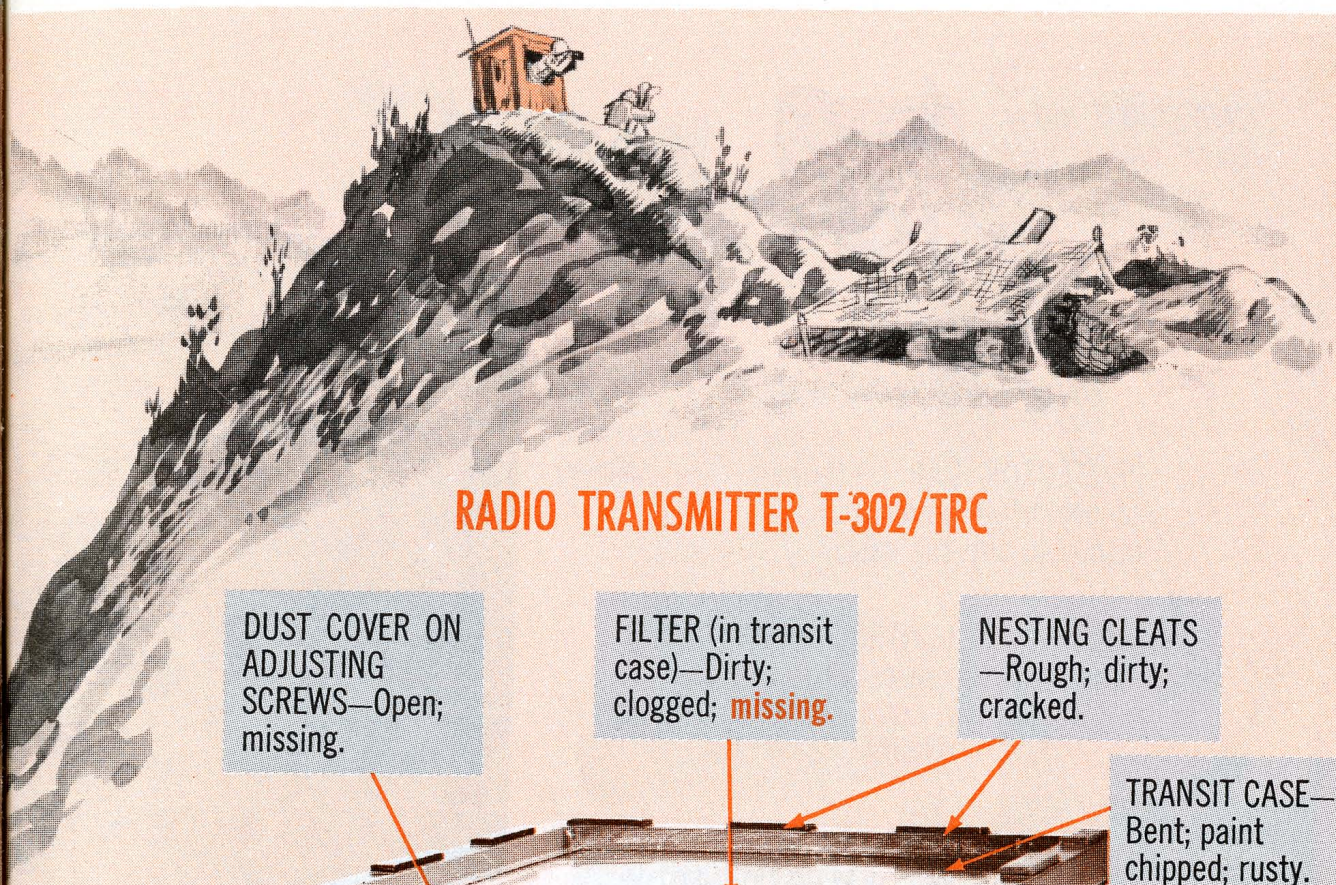
RECEPTACLE CONNECTOR, MALE—Pins bent, **broken;** corroded.

PLUG CONNECTOR—Loose; wing nuts not folded.

ALARM LAMP—**Burnt out; missing.**

CONTROL KNOBS—Loose; **fail to engage or make contact; missing.**

ANTENNA CONNECTOR—**Ceramic cracked;** dirty.



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CONTROL KNOBS—Loose; **fail to engage or make contact; missing.**

ANTENNA CONNECTOR—**Ceramic cracked;** dirty.

RADIO RECEIVER

CARRYING STRAP—Loose; **canvas ripped** or worn; **missing.**

SNAP CATCHES—Loose; **missing.**

ANTENNA CONNECTOR—**Ceramic cracked;** dirty.

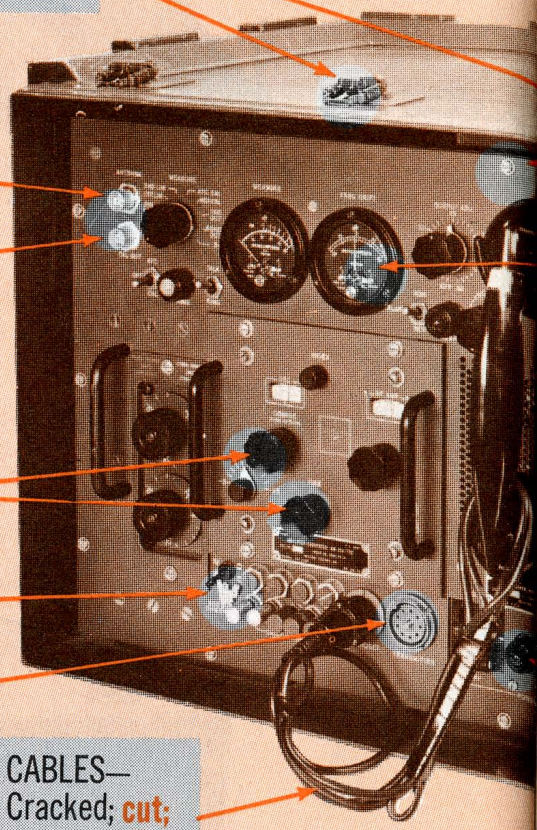
PROTECTOR CAP (antenna connector)—**Missing;** not attached to antenna cable.

CONTROL KNOBS—Loose; **fail to engage or make contact; missing.**

BINDING POSTS—Dirty; corroded; spring weak; **fails to snap to original position when released.**

PLUG CONNECTOR—Loose; wing nuts not folded.

CABLES—Cracked; **cut;** worn.

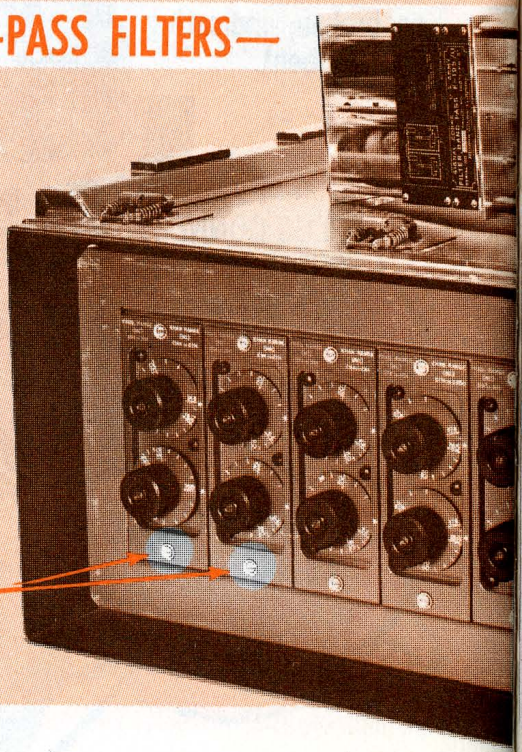


BAND-PASS FILTERS—

ACCESSORIES CASE COVER—**Missing;** bent; paint chipped or cracked.

CARRYING STRAP—Loose; **canvas ripped,** worn; **missing.**

PANEL FASTENERS—Not flush with panel; **fail to lock.**



RADIO RECEIVER R-417/TRC

CARRYING STRAP—Loose; **canvas ripped** or worn; **missing.**

SNAP CATCHES —Loose; **missing.**

NESTING CLEATS —Rough; dirty; surface cracked.

PANEL FASTENERS—Not flush with panel; **fail to lock.**

ANTENNA CONNECTOR—**Ceramic cracked;** dirty.

DIALS—Glass cracked or broken; indicating needles bent.

PROTECTOR CAP (antenna connector)—**Missing;** not attached to antenna cable.

TRANSIT CASE—Bent; paint chipped; rusty.

CONTROL KNOBS—Loose; **fail to engage or make contact; missing.**

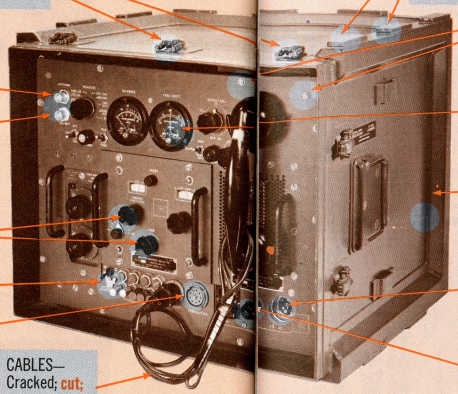
RECEPTACLE CONNECTOR, MALE—Pins bent, corroded, **missing.**

BINDING POSTS—Dirty; corroded; spring weak; **fails to snap to original position when released.**

PLUG CONNECTOR—Loose; wing nuts not folded.

POWER LAMP—**Missing; fails to light when POWER switch is ON.**

CABLES—Cracked; **cut;** worn.

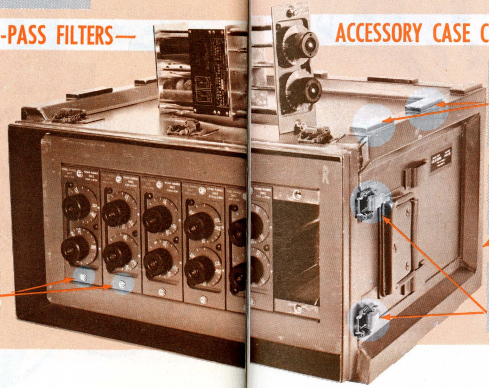


BAND-PASS FILTERS— ACCESSORY CASE CY-1344/TRC

ACCESSORIES CASE COVER—**Missing;** bent; paint chipped or cracked.

CARRYING STRAP—Loose; **canvas ripped,** worn; **missing.**

PANEL FASTENERS—Not flush with panel; **fail to lock.**

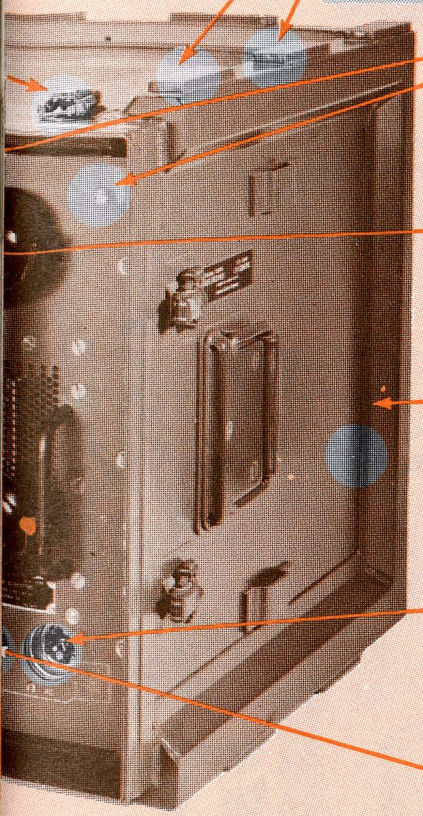


NESTING CLEATS—Rough; dirty; surface cracked.

ACCESSORIES CASE—Bent; paint chipped or cracked.

SNAP CATCHES —Loose; **missing.**

R-417/TRC



NESTING CLEATS —Rough; dirty; surface cracked.

PANEL FASTENERS — Not flush with panel; **fail to lock.**

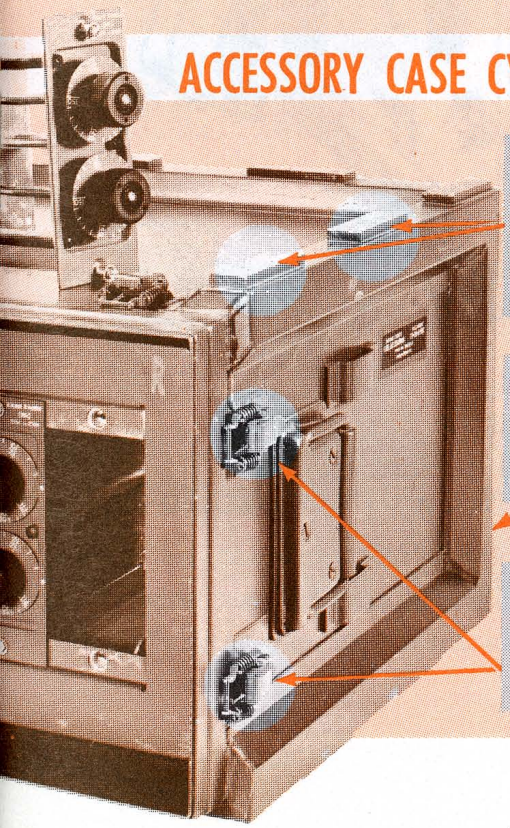
DIALS—Glass cracked or broken; indicating needles bent.

TRANSIT CASE— Bent; paint chipped; rusty.

RECEPTACLE CONNECTOR, MALE— Pins bent, corroded, **missing.**

POWER LAMP—**Missing; fails to light when POWER switch is ON.**

ACCESSORY CASE CY-1344/TRC

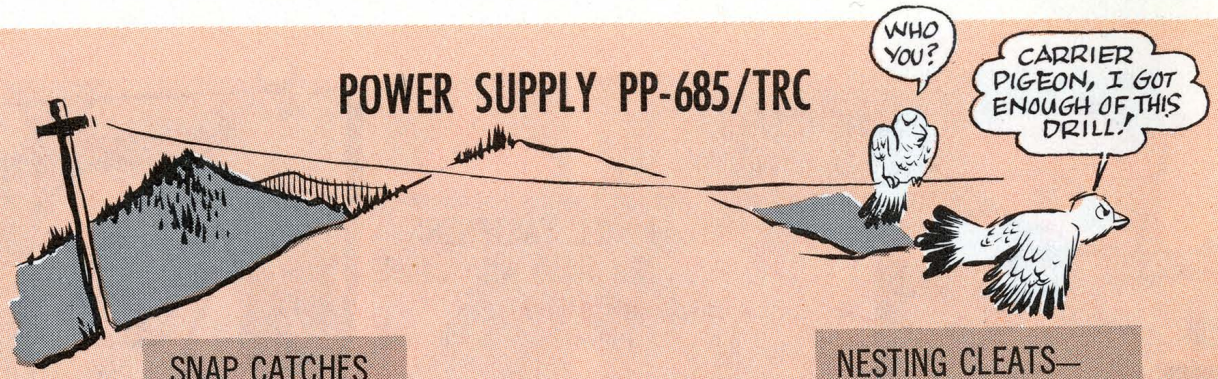


NESTING CLEATS— Rough; dirty; surface cracked.

ACCESSORIES CASE— Bent; paint chipped or cracked.

SNAP CATCHES —Loose; **missing.**

POWER SUPPLY PP-685/TRC



SNAP CATCHES —Loose; **missing.**

CONTROL KNOBS— Loose; **fail to engage or make contact; missing.**

NESTING CLEATS— Rough; dirty; surface cracked.

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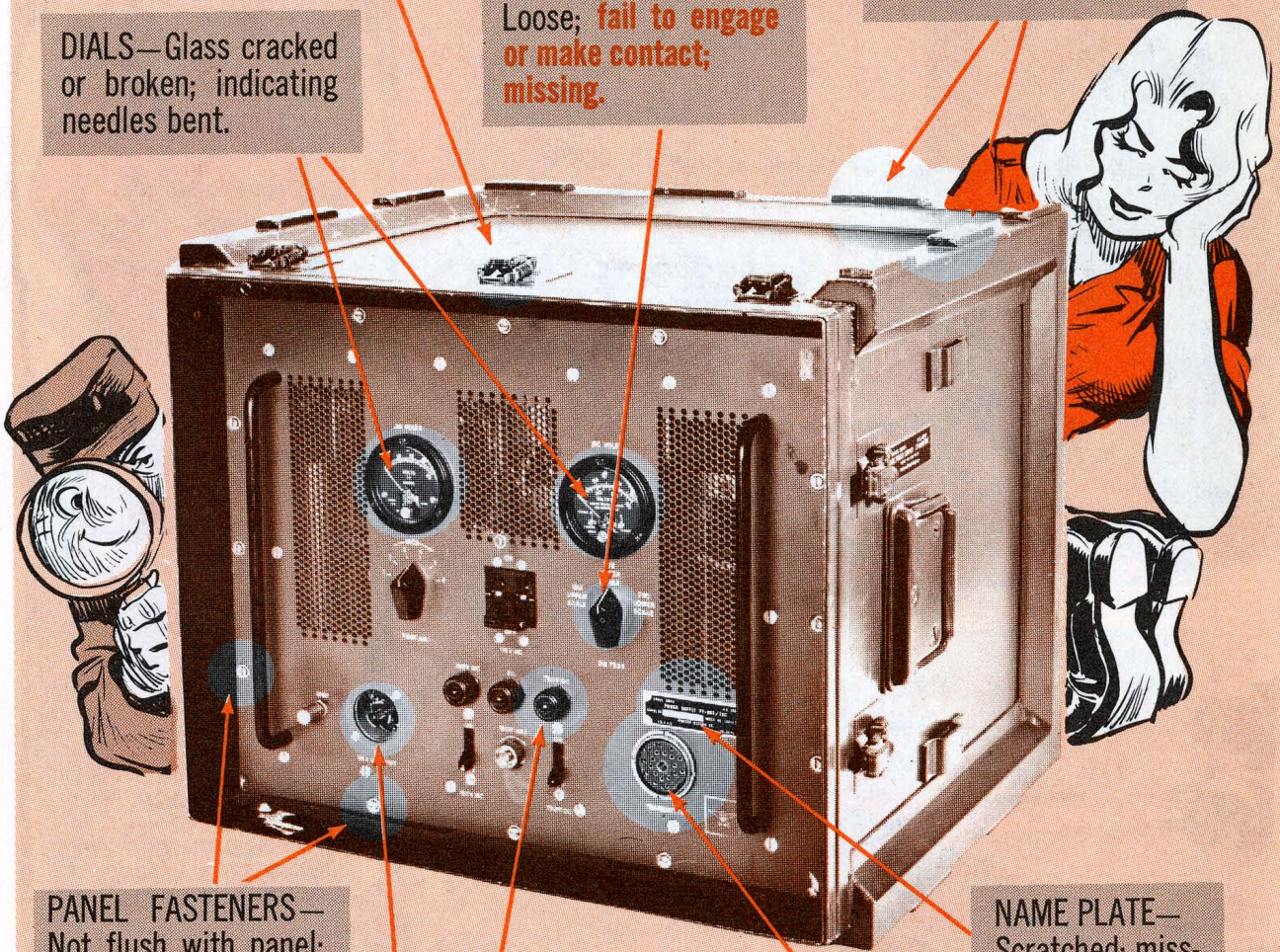


PANEL FASTENERS— Not flush with panel; **fail to lock.**

AC INPUT RECEPTACLE—Prongs bent, corroded.

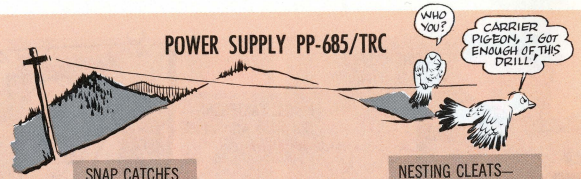
INDICATOR LAMP 750 VDC—**Fails to light when switch is ON.**

NAME PLATE— Scratched; missing; **not legible.**

PLUG CONNECTOR—Loose; wing nuts not folded.

CARRYING STRAP— Loose; **canvas ripped** or worn; **missing.**

POWER SUPPLY PP-685/TRC



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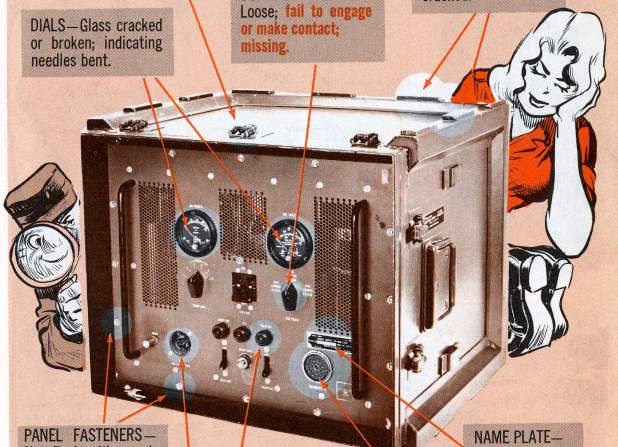

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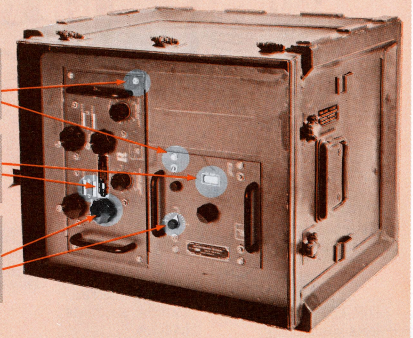
RF TUNERS AND ACCESSORIES CASE

COMPONENTS CASE CY-1388/TRC
(Amplifier-Converter AM-913/TRC, AM-914/TRC)
(Amplifier-Multiplier AM-912/TRC, AM915/TRC)

PANEL FASTENERS— Not flush with panel; **fail to lock.**

DIALS—Glass cracked or broken; indicating needles bent.

CONTROL KNOBS— Loose; **fail to engage or make contact; missing.**



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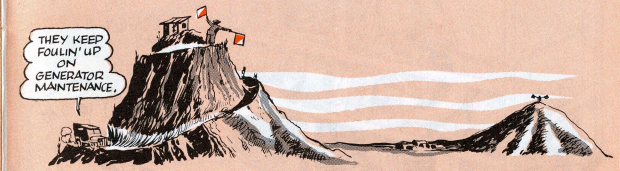
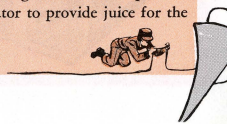
NESTING CLEATS— Rough; dirty; surface cracked.



So much for the electronic equipment itself. But along with these components come such things as the mast assembly, the generator to provide juice for the whole works, and some vital accessories.



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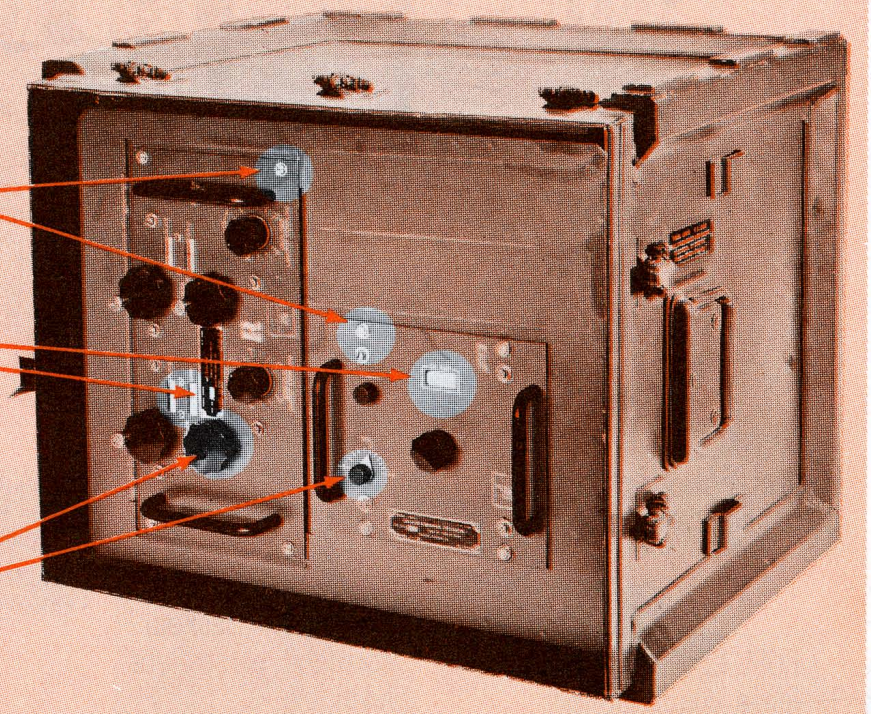

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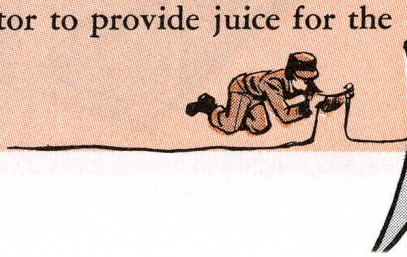
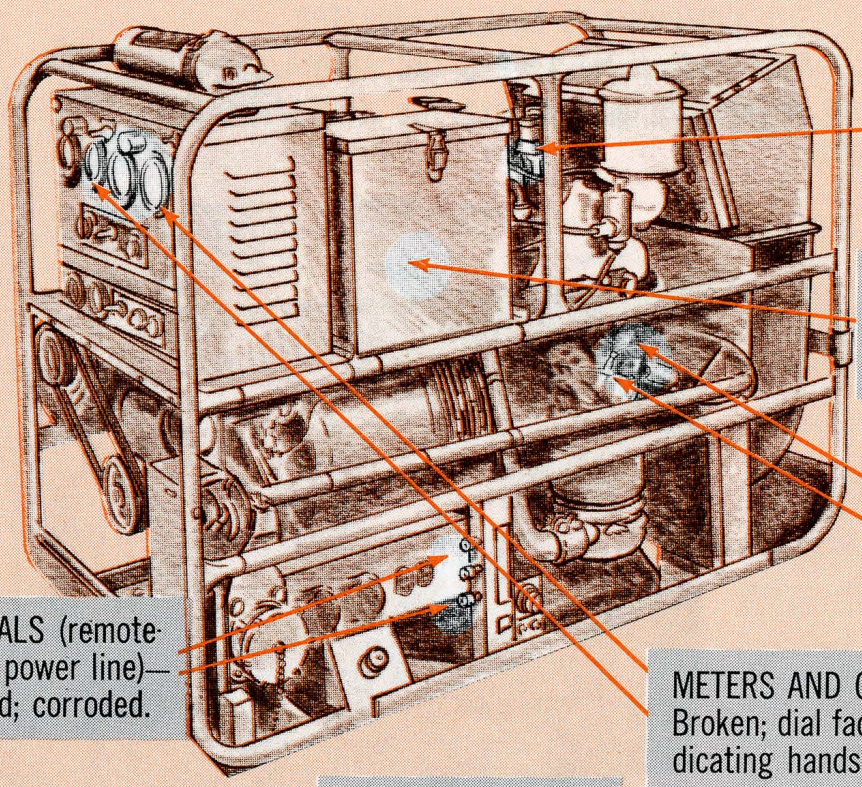


GENERATOR SET PU-286/G



FUEL (Oil, gasoline)—Level low.

TOOL BOX—Missing; rusty; lid won't function.

WIRING—Cut; frayed; terminals loose.

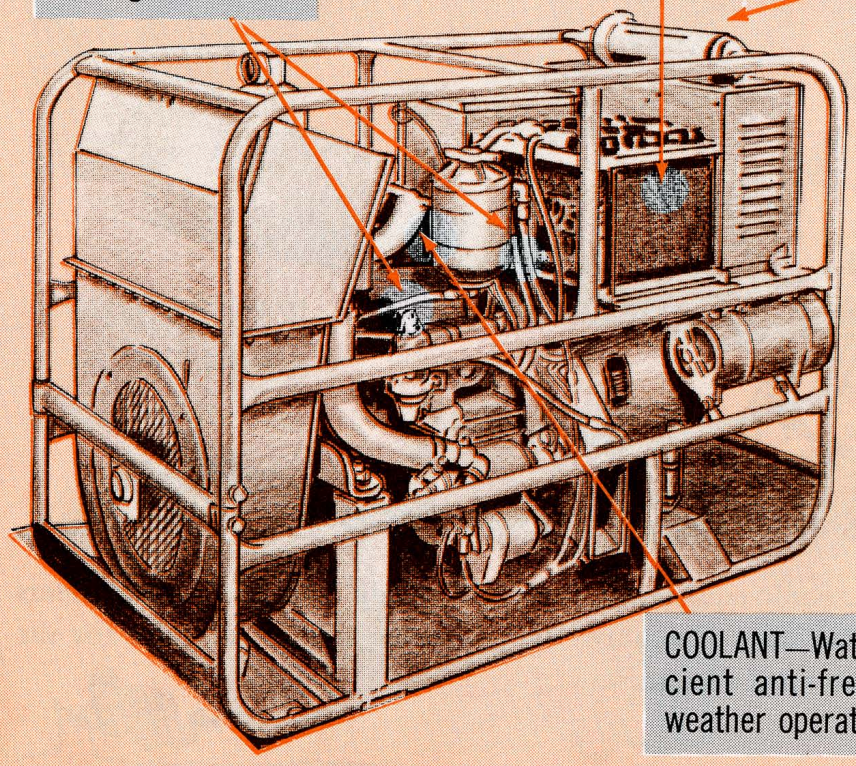
TERMINALS (remote-control, power line)—Damaged; corroded.

METERS AND GAGES—Glass Broken; dial faces marred; indicating hands bent.

BATTERY—Cracked; corroded, electrolyte level low.

FUEL LINES—Leak; loose connections; damaged.

FIRE EXTINGUISHER—Missing; defective; mounted loosely.

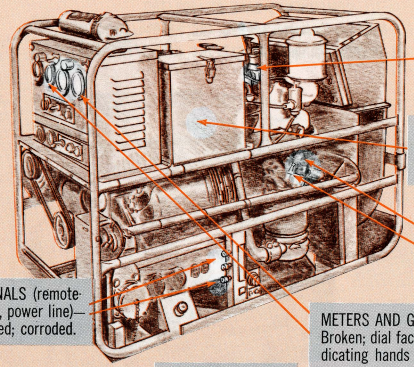


PANELS, FRAME—Bent; paint chipped, damaged.

LOCATION—Not level; uncovered.

COOLANT—Water low; insufficient anti-freeze for cold weather operation.

GENERATOR SET PU-286/G



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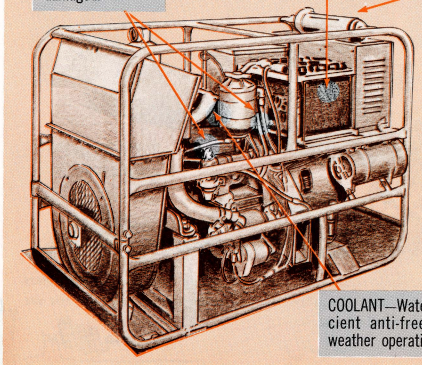
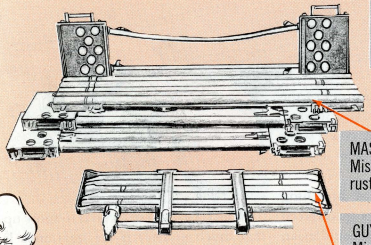


COOLANT—Water low; insufficient anti-freeze for cold weather operation.

MAST AB-235/G



MAST SECTION CARRIER—Bent; fails to hold sections securely.

MAST SECTIONS AB-332/G—Missing; bent; paint chipped; rusty.

GUY STAKES GP-113/G (5)—Missing; bent; broken; hammer rusty or missing.

BLOCK AND TACKLE—Missing.

GUY ROPES—Missing.

GIN POLE CAP—Missing.

MAST BASE—Missing.

GUY PLATES (5)—Missing.

HINGED GUY ATTACHMENTS (5)—Missing.

GUY REEL—Missing.

SNUBIT—Missing.

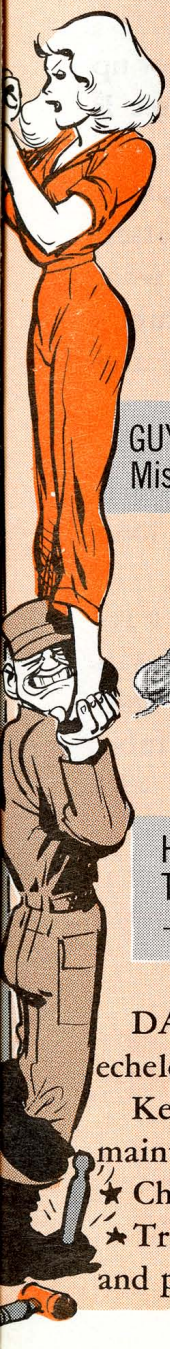
DA Form 11-238 is your maintenance check list, of course, for daily first echelon maintenance—as well as weekly 2nd and 3rd echelon checks.

Keep it current . . . keep it with the equipment on site . . . and keep preventive maintenance at the top of your unit's daily operations.

★ Check the form—looking only for those items not crossed out.

★ Treat your AN/TRC-24 right, and it'll get the word . . . handle the word . . . and pass the word without a word of complaint.

MAST AB-235/G



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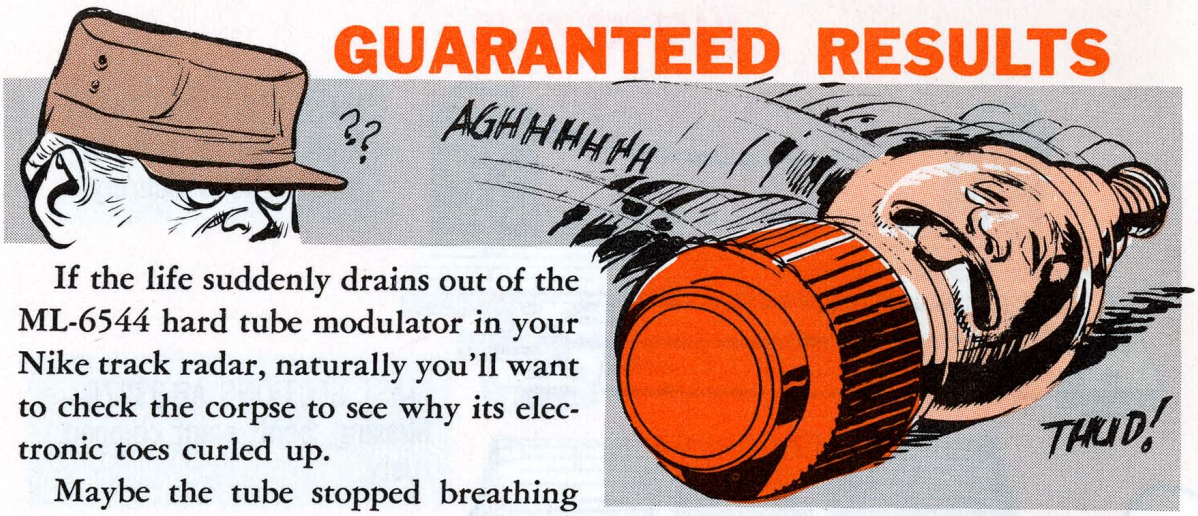
GUARANTEED RESULTS



If the life suddenly drains out of the ML-6544 hard tube modulator in your Nike track radar, naturally you'll want to check the corpse to see why its electronic toes curled up.

Maybe the tube stopped breathing long before it delivered its guaranteed 50 hours of operation. That could mean some kind of built-in trouble. A defect in manufacture or material. Happens sometimes.

Sort of bear in mind that every 6544 comes equipped with a warranty—or guarantee of performance — that fixes you up with a brand new tube if anything goes haywire within that warranty period.

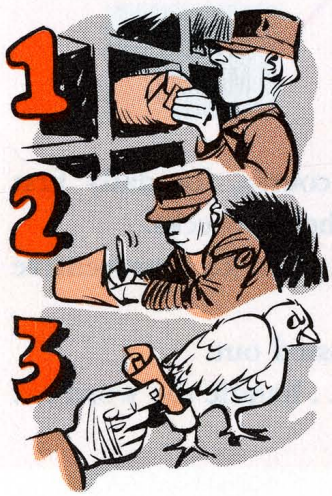
And that's the thing to watch—"within the warranty period." Which is 50 hours of service within one year of the time the Army takes possession.

Now it could be that tube sat on a depot shelf for a number of months before finding its way to your unit—and then into a track radar.

Which means a defect has to show up that much quicker if the guarantee is going to do any good. That's the way it goes. One thing you will know, though, is when your unit took possession of the tube. Add that to what higher echelon knows about the tube's movements—and you've got a life and death history.

One thing about 'em is that any tube with a serial number below 449154 is out of the money. Its warranty long since went that-a-way.

If it looks like your outfit rates a replacement, then, depot people will want to see it . . . and you'll be told when and where to ship the tube. Meantime, this quick procedure will square the final details away:



1 PUT THE TUBE AWAY FOR THE TIME BEING. HANG ON TO IT, 'CAUSE HIGHER ECHELON PEOPLE MAY WANT TO SEE IT.

2 COMPLETE A DA FORM 468 (UNSATISFACTORY EQUIPMENT REPORT) ON THE TUBE AND FIRE IT OFF TO USASIMSA—U. S. ARMY SIGNAL MATERIEL SUPPORT AGENCY, FT MONMOUTH, N. J.

3 MAKE UP A QUICK LETTER OR TELETYPE. INCLUDE THE TUBE'S SERIAL NUMBER, HOURS OF OPERATION, WHEN YOUR UNIT PUT IT INTO USE, AND A WORD OR TWO ON WHAT HAPPENED. SEND THAT PRONTO TO:

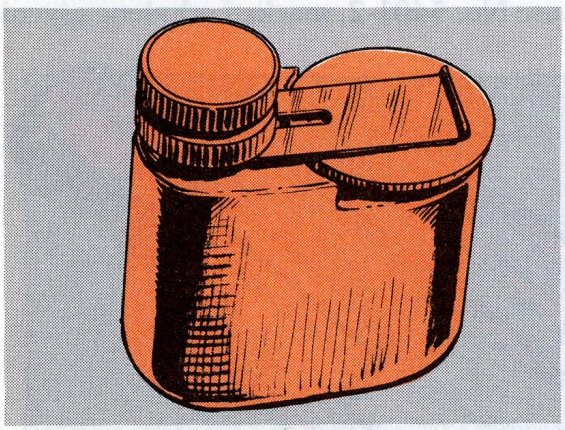
Then rest. The tube's history will be checked and the word will be passed on what to do with it. If it qualifies for replacement, then the manufacturer and depot will want to see it.

In that case, fill out the form shipped with every tube (Form ST-1536) . . . wrap it around the tube . . . and ship it according to the instructions passed down from Philadelphia.

Since this is all part of an Ordnance end item, the Ordnance Corps will want to know about it. Keep in form with a DA 9-110. That's the Guided Missile Component Evaluation Data Report, known better as a CER. Like its instructions say, fill it out and send to Redstone Arsenal.

CHARGE AHEAD

Don't bother to send those handy little PP-1578 PD Radiac Detector Chargers (FSN 6665-542-1177) back to field maintenance or depot for repair. The deal now is to grab a new one for your unit whenever something goes wrong.



Lack of repair parts and a price tag of $15 put the PP-1578/PD well below the cut-off price of $20—and therefore well into the "beyond economical repair" category. So, repair by replacement.

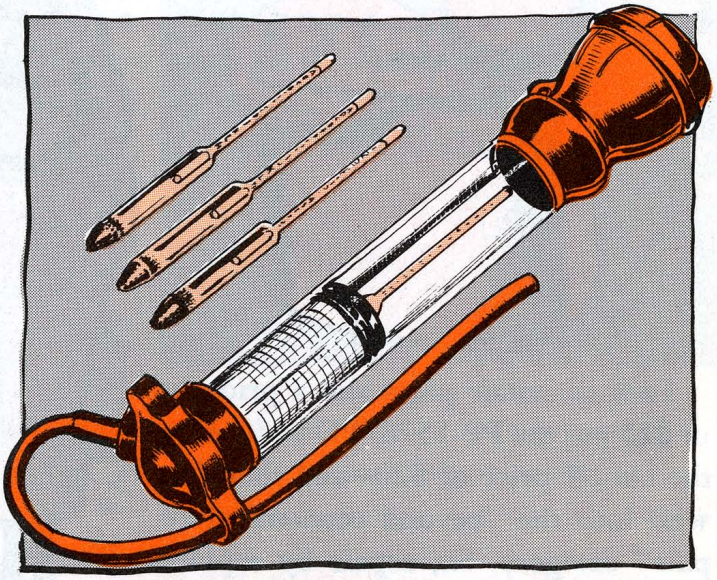
HOW TO USE....

YOUR ANTI-FREEZE

It's as simple as A, B, C, once you get the hang of it—that is, using the hydrometer to make sure the anti-freeze in your cooling system will protect it while those wintry blasts blow.

First things come first so check the float to see that the one in the tester goes with the type of anti-freeze you're testing. All military vehicles use ethylene glycol as anti-freeze, so then be sure you use No. 5401-2, marked ethylene glycol.

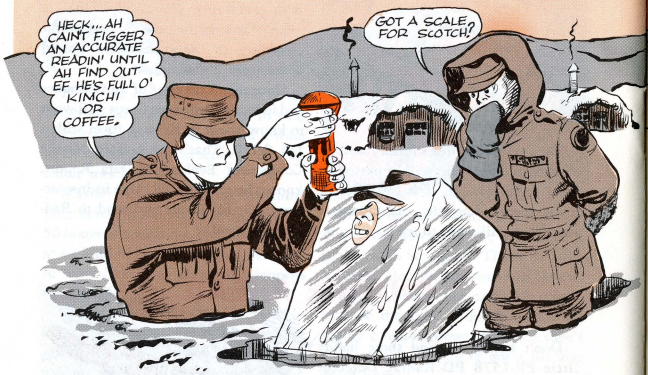
If you have anti-freeze syringe hydrometer, FSN 6630-449-6609, you'll find that it has two alcohol floats and two ethylene glycol floats. The extra ones are spares.



You can tell the difference in the two types of floats by the background colors. The ethylene glycol float has a yellow background, while the alcohol float has a blue background.

HOW TO USE....

YOUR ANTI-FREEZE HYDROMETER



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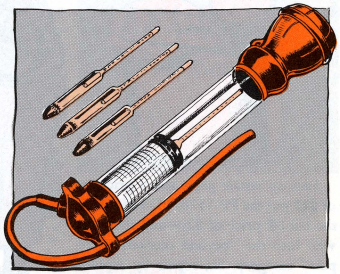
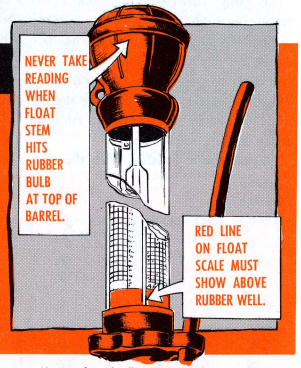
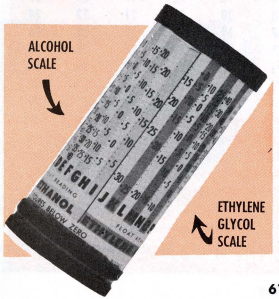


HERE'S HOW YOU GO ABOUT USING THEM.

With engine running draw a charge of your radiator cooling system solution into the tester and then squeeze the bulb so it'll go back into the radiator. You might do this a couple of times since this will make your tester's thermometer nearer the temperature of the solution you're going to check. The solution can be either cold, warm or hot . . . just as long as it's thoroughly mixed in the cooling system. Then draw a charge into the tester so that it'll raise the float to a point that it'll float free. Never take a reading when the top of the float stem touches the rubber stopper at the top of the barrel. The red line on the float scale must show above the rubber well.



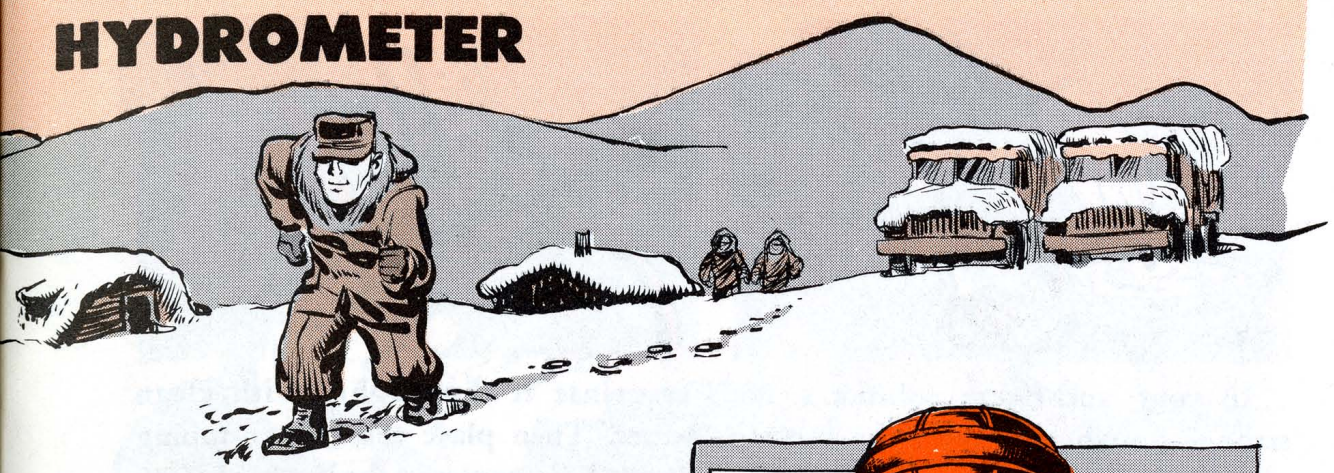


You read on the float scale the letter or figure on the line nearest and above the top of the solution.

Now look at the thermometer and follow across along the line nearest and above the top of the red thermometer column to the column of figures headed by the float letter. The figure in the block below the float letter shows you the freezing point of the solution. You read the section which goes with the anti-freeze being tested. If you're testing ethylene glycol, then you read the section tinted yellow. But if you're testing alcohol, you read the section tinted blue.

The black figures show protection above zero. The red figures show protection below zero.

HYDROMETER



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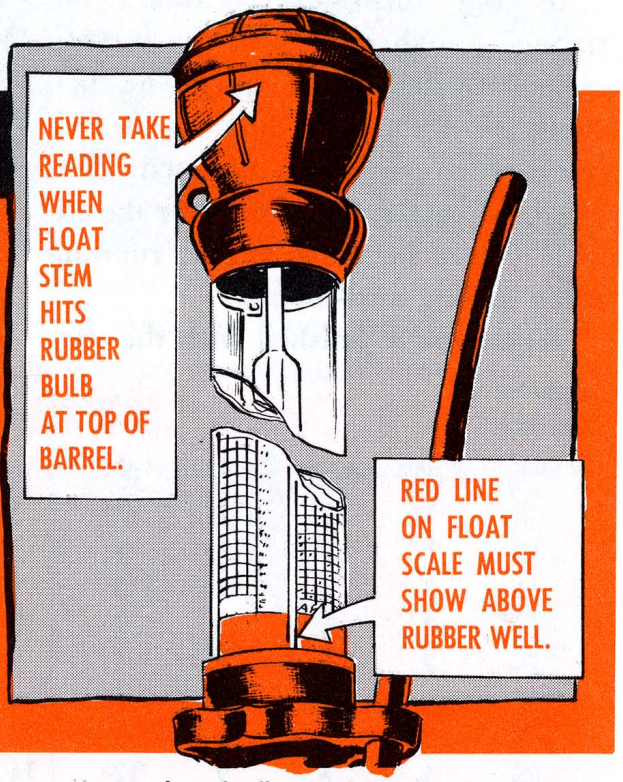

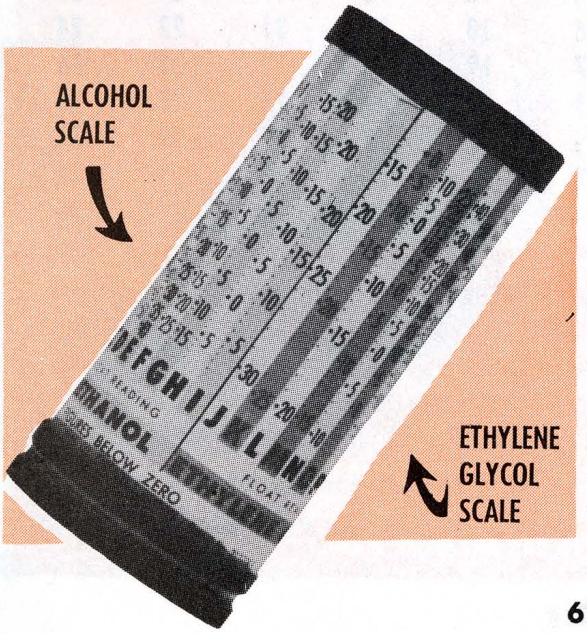

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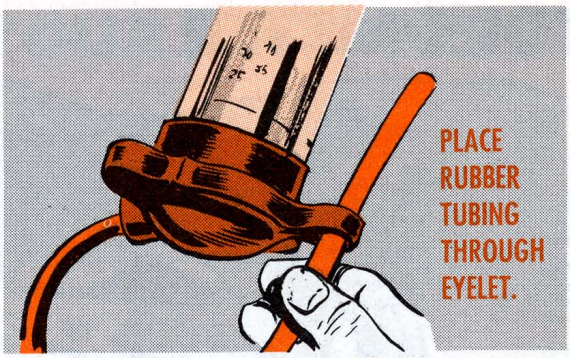


If your anti-freeze solution's not strong enough to protect the cooling system of your piece of equipment, then check the chart to see how much anti-freeze your cooling system will need for the necessary protection for the climate you're in. Have engine running when adding anti-freeze.

When you're finished with the tester, rinse it thoroughly with clean water. Then place the rubber tubing through the eyelet in the hanger before you put the tester away. If you don't watch the rubber tubing it will get a permanent kink when you bend it too close to the bottom of the tester, and the next thing you know there'll be a leak at the bend.

Ethylene Glycol

Radiator Capacity in quarts	+30°	+20°	+10°	0°	−10°	−20°	−30°	−40°	−50°	−60°
8	1	1	2	3	3	4	4	4	5	5
12	1	2	3	4	5	5	6	6	7	7
16	2	3	4	5	6	7	8	8	9	9
20	2	3	5	7	8	9	10	10	11	12
24	2	4	6	8	9	11	12	12	13	14
28	3	4	7	9	10	11	13	14	15	16
32	3	5	8	11	12	14	16	17	18	19
36	4	6	9	12	14	16	18	19	20	21
40	4	6	10	13	16	18	20	21	22	24
44	4	7	11	14	17	19	22	23	25	26
48	5	8	12	16	19	21	24	25	27	28
52	5	8	13	17	21	23	26	27	29	31
56	6	9	14	18	22	25	27	29	31	33
60	6	10	15	20	24	27	29	31	34	35

To get the number of quarts of anti-freeze you'll need for first filling, you'll have to know how much your radiator holds. Check the first column until you find the radiator capacity for your piece of equipment and then follow across until you come to the protection you'll need. If your vehicle's radiator holds 24 quarts and you want protection to −20°, then you'd have to add 11 quarts of anti-freeze.

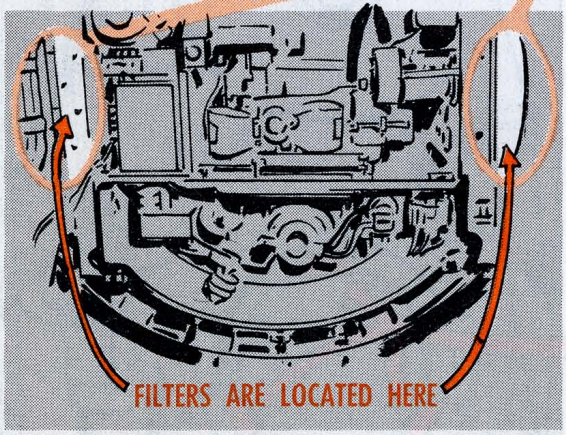
If you want additional protection, subtract figure of present protection from that of the protection you want. Say your cooling system holds 24 quarts and you want −30° instead of −20°. You subtract 11 from 12 and that means you'll have to add one more quart.

MISSILE BLASTS

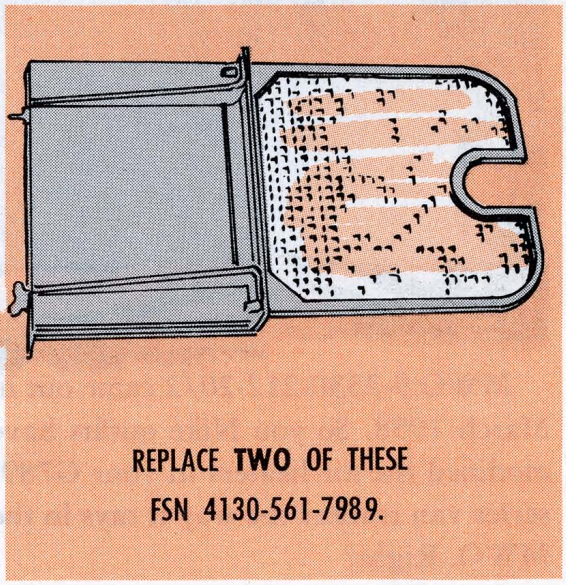
FILTERS OUTTA KILTER?

Trying to track down electronic troubles on a Nike site can be irritating. Down-right annoying, in fact.

That's why some guys in one Hercules outfit were ready to pack the place. Everything'd be going along normal-like in the RC van when out of no where an interlock would open up for about a second in either the missile or target track radars. And that meant loss of high voltage which meant damaged equipment.



The guys practically rebuilt the track radars before they hit on the answer. They followed the air flow channels of the radar blowers like a hound on the scent. And they found the trouble—two filters that were clogged, but good.



They didn't know the filters were there 'cause there's no mention of them in TM 9-1430-253-20 (28 Oct 59).

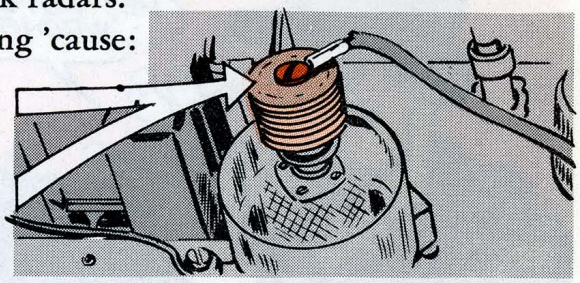
Now they clean the filters once a month and replace them when they wear out. The depots have new ones on their shelves under the nomenclature: Filter, Air Conditioning, and the FSN is 4130-561-7989.

LOSING YOUR HEAD?

Troubles . . . that's what some Nike-Hercules outfits are having.

It's with the head busting off from the shaft of the bolt that holds the heat dissipating cap on to the plate cap of the 4PR60A (V4) tube. That's the tube that's in the trigger amplifier in the track radars.

It's a good bet that the head is snapping 'cause:

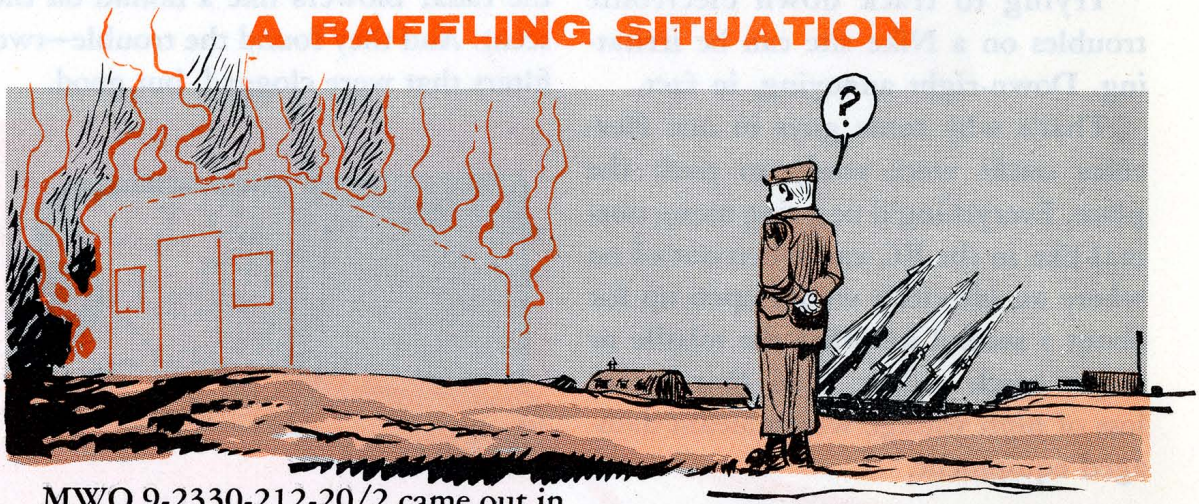


1. TOO MUCH MUSCLE IS USED TO TIGHTEN THE BOLT WHEN A NEW 4PR60A IS PUT IN. OR . . .
2. THE BOLT FREEZES IN THE CAP, SEEING'S HOW THEY'RE DIFFERENT METALS.

You can call a halt to overtightening by trying not to try so hard.

And freezing'll come to a screeching stop if you stick some anti-seize compound on the threads of the bolt before you run it down. The compound is in your Ord 7 SNL Y4-6 under FSN 8030-251-3983.

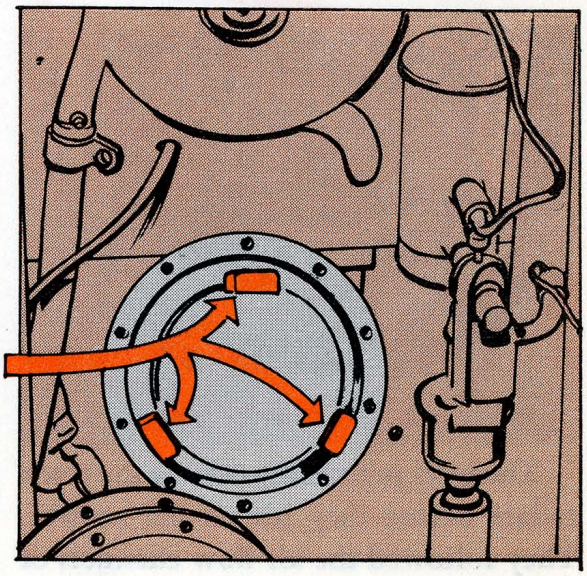
A BAFFLING SITUATION



MWO 9-2330-212-20/2 came out in March 1958. So you Nike outfits have modified the air heaters in your G789-series van trailers the way it says in the MWO. Right?

But—did you get change 1 to the MWO? The change, which is dated 22 April 1960 and is urgent, tells you to make sure you put the ceramic baffle in the heater the right way—with the short lugs facing front.

The heater'll get hotter'n—well—darn hot if you put the baffle in backwards.



Connie Rodd's BRIEFS

TM 9-2810 revision

Getting eyestrain reading between the lines of TM 9-2810 (4 Aug 58), the tactical motor vehicle maintenance procedure manual? Then roll an eyeball through Change 1 (13 Jun 60) to the TM. You can read it like a Gypsy reading tea leaves. Might even see some of those changes you suggested.

Anti-cold kits

Whether you love winter sports or not, if you're in the north country you might like to take a look at TF 9-2549. It's the training film story on vehicle winterization kits, and its for real . . . it was filmed up there where these kits are a must. You'll also want to see SB 9-16 Change 1 (dated 25 July 60.) It's also on winterization equipment.

In a storage stew?

Stored vehicles giving you pains in the back-side of the boondocks? Two new TB's may ease 'em. TB 9-300-1/1 (4 May 60) covers "Combat Vehicles: Inspection, Care, and Preservation During Storage." TB 9-300-2/1 (4 May 60) gives the same kind of dope for your wheeled rigs.

Don't do it

Don't send any XM4E2 LaCrosse missiles back through your support unit with battery electrolyte in the battery overflow sump jar. The electrolyte is rough on a guy's skin and clothes. And the man who handles the missile stands a good chance of getting hit with the stuff.

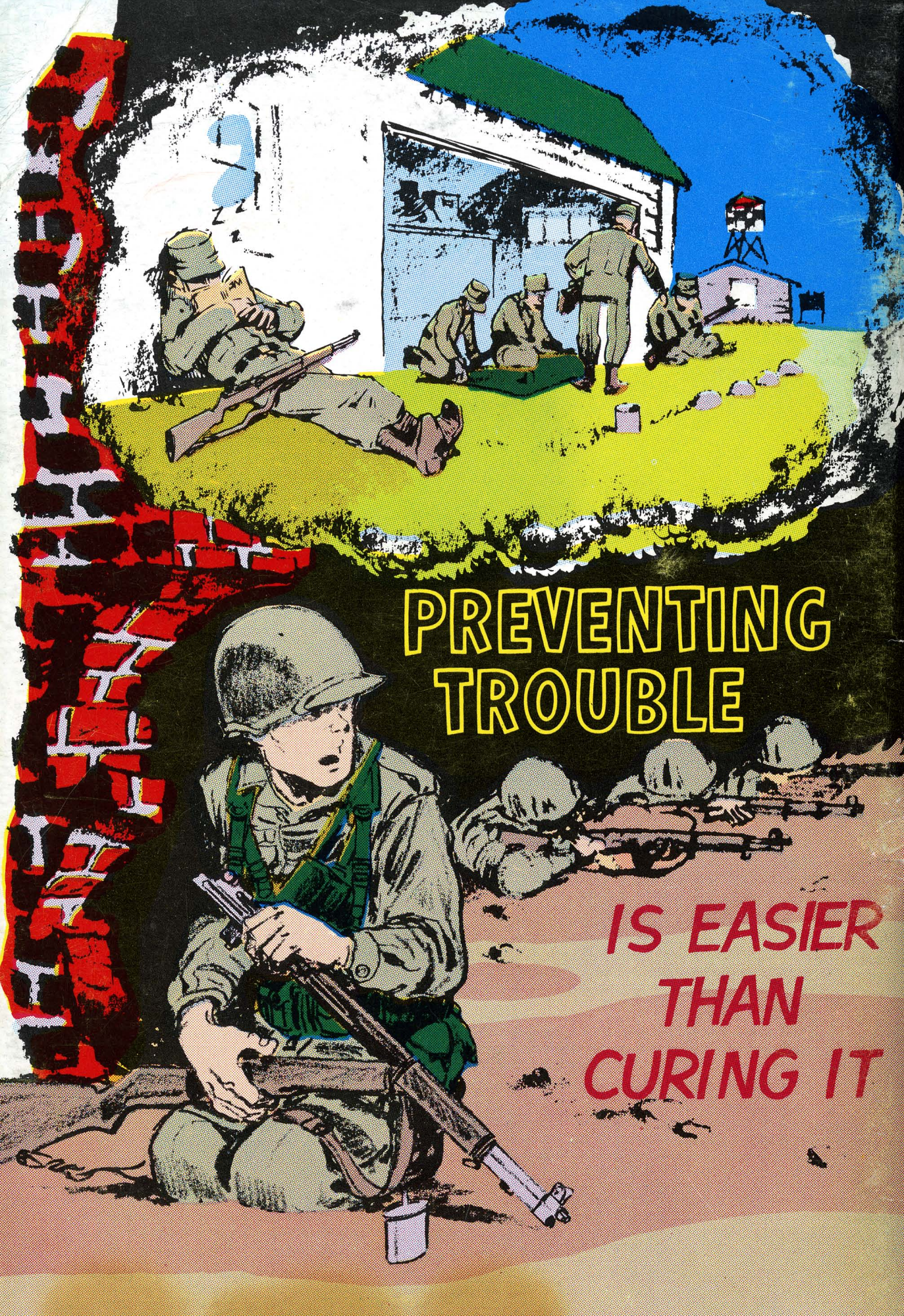
Lean away

Watch it! Those three spare fuses nesting in the upper left-hand corner of your AN/GRC-19 radio set are more exposed than Connie on a hot July day. If they get busted, you got no spares to call on—comes an emergency. Arms, elbows, feet, etc., been doin' most of the damage. Sort of lean away.

Get the message

A leaking primer pump, together with normal use of the auxiliary fuel pump, can make it rough on your Bird Dog (L-19) engines. The extra fuel floods the cylinders, leading to engine stoppage. Check out TMC message TCSMC-EG-08-01446 for more info . . . and remember what the —6 says about checking the primer for leaks and the mountings for looseness.

Would You Stake Your Life on the Condition of Your Equipment?


PREVENTING
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